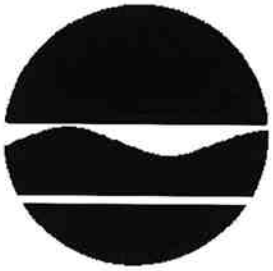
SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016

SITE IDs 299, 300: R. E. DIETZ COMPANY

SITE SUMMARY REPORT
DRAFT



Onondaga Lake Project
Task 5: 104(e) Review

Site No. 734030-002
Work Assignment Number D003060-27

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FIGURES

1.0 SITE DESCRIPTION

The information referenced in this report was mainly obtained from the 104(e) responses of R.E. Dietz Company (R.E. Dietz, Company ID 2043). The three mailings received are dated September 10, 1996, December 6, 1996, and September 30, 1998. The first two responses were partial submittals based on the original June 19, 1996 USEPA/NYSDEC Joint Request for Information, and the third mailing was in response to USEPA/NYSDEC's April 14, 1998 Joint Request for Additional Information. Portions of the first mailing are illegible and were not incorporated into this Site Summary Report. Information obtained from other sources is noted, as necessary.

It should be noted that page numbers were not indicated on the first two R.E. Dietz mailings. To facilitate referencing these documents, page numbers have been added, starting with page 000001 on the first page of Appendix 1 of Mailing No. 1. Appendix numbers were indicated in the first two R.E. Dietz mailings, and these will be indicated along with the page numbers that have been added.

1.1 Location

This Site Summary Report discusses two R.E. Dietz facilities which were located in the vicinity of Onondaga Lake. The first site was located at 225 Wilkinson Street in Syracuse, New York (Site ID 299) and the second site was at 1001 Wolf Street in Syracuse, New York (Site ID 300). The locations of these facilities in relation to Onondaga Lake are shown in Figure 1 herein and are also shown on the USGS topographic map provided as Figure 2 herein.

The Wilkinson Street site was bound by Wilkinson Street and Wilkinson Park to the north, Leavenworth Avenue to the east, Tracy Street and railroad tracks to the south, and Van Rensselaer Street and the Oneida Craft Manufacturing Company to the west, as shown in

Figure 3 herein (Mailing No. 1, Figure 2). The Wolf Street site was bound by Hiawatha Boulevard and the Benbow/Norchem Chemical Packaging Company to the northwest, 6th North Street and the Stack Equipment Company to the northeast, Wolf Street to the southeast, and a vacant lot and 4th North Street to the southwest, as shown in Figure 4 herein (Mailing No. 1, Figure 2). Based on the un-scaled facility maps that were submitted by R.E. Dietz as part of Mailing No. 1 and local road maps, the Wilkinson Street and Wolf Street main buildings are approximately 6 and 13 acres in size, respectively. Both sites are situated in industrial-zoned areas.

1.2 Geology

The surficial geology of the Syracuse area, which includes both the Wilkinson Street and Wolf Street facilities, was strongly influenced by the most recent glacial advance (Wisconsin age, 12,000 to 14,500 years ago). The area occupies a region that was covered by Lake Iroquois, a large glacial lake situated in front of the ice margin. The broad flat-lying plains situated north from Syracuse to Lake Ontario were formed beneath Lake Iroquois and are characterized by lacustrine fine sand and silt deposits. Additional glacial features common to the region are moraines, drumlins, U-shaped valleys, and meltwater channels.

Onondaga Lake and all its major tributaries lie within glacial meltwater channels. These features originally were conduits carrying meltwater at large volumes and high velocities away from the glacier. Sediment types characteristically found in meltwater channels are sands and gravels. These relict features form important water bearing and transmitting units which form an irregularly branching, net-like pattern.

The bedrock geology of the greater Syracuse area includes Lower to Middle Paleozoic age sedimentary rocks predominated by carbonate (dolostone and limestone) and shale, and containing some sandstone, siltstone, and evaporites. Bedrock directly beneath the area (as well as underneath Onondaga Lake) is Silurian Vernon Shale (Rickard and Fischer, 1970)

which has low permeability but does possess secondary porosity due to fractures. The USDA Soil Survey of Onondaga County classifies the soil type in the vicinity of both the Wilkinson Street and Wolf Street facilities as urban land and Palmyra gravelly loam (USDA, 1977, Maps 22 and 29). Soil boring logs were not available for these two sites.

A draft Phase I environmental assessment was provided in R.E. Dietz's first mailing (Appendix 8), which was prepared by Stearns & Wheler for R.E. Dietz. This report, which was dated May 1990, indicated that beneath the Wolf Street facility, there is an area of outwash and gravel with stratified and well-sorted meltwater deposits, some calcite cementation, and high permeability (Mailing No. 1, Appendix 8, Phase I, pp. 4-5). This Phase I environmental assessment is referred to frequently in this report, and will be referenced using the Stearns & Wheler-specified page numbers, as opposed to the consecutive page numbering system mentioned in Section 1.1.

1.3 Hydrogeology

According to the Syracuse West USGS quadrangle map, the ground surface elevation at the R.E. Dietz Wilkinson Street facility is approximately 398 feet NGVD (see Figure 2). Shallow groundwater is expected to flow north towards the Barge Canal and Onondaga Lake (approximate elevation 363 feet NGVD) based on the ground surface contours shown on the USGS map for the area, however, the change in surface elevation in this area is very slight. The Wilkinson Street site is located above a confined aquifer with potential yields between 5 and 500 gallons per minute (Mailing No. 1, Appendix 8, Phase I, p. 4).

The surface elevation at the Wolf Street facility is approximately 400 feet NGVD (see Figure 2), and shallow groundwater is expected to flow west and northwest towards Ley Creek and Onondaga Lake based on ground surface contours. Underlying the Wolf Street facility is "Primary Water Supply Aquifer #16 - Baldwinsville" and, as noted in Section 1.2, there is an area of high permeability (Mailing No. 1, Appendix 8, Phase I, p. 5).

Groundwater elevation data were not provided for either facility.

1.4 Surface Water Hydrology

The Stearns & Wheler Phase I environmental assessment states that the Wilkinson Street facility topography is basically flat, with no significant changes in elevation. As shown on Figure 1, the Wilkinson Street facility is located approximately 7,000 feet southeast of Onondaga Lake, 3,000 feet south of the Barge Canal, and 1,500 feet west of Onondaga Creek. The Wolf Street facility is located approximately 5,000 feet northeast of Onondaga Lake and 2,000 feet southeast of Ley Creek. It was generalized in the Stearns & Wheler report that "surface water runoff from each site flows mainly toward storm drains located along the streets adjacent to each property" (Mailing No. 1, Appendix 8, Phase I, p. 4).

The Wilkinson Street and Wolf Street facilities include parking areas adjacent to the main buildings which are assumed to be paved. The Wilkinson Street site parking area is located to the east of the main building and adjacent to Leavenworth Avenue (see Figure 3), and the Wolf Street facility parking area is located to the west of the main building on the opposite side of a concrete pad (see Figure 4). Measures taken to prevent off-site contamination from surface runoff (e.g., berms, vegetated swales), if any, were not indicated in R.E. Dietz's submittal. Both facilities had roof drain systems which diverted runoff into the sanitary sewer system. Specifically, the Wilkinson Street facility diverted roof runoff into a floor drain on the first floor, and the Wolf Street facility had at least two floor drains which were used for the same purpose (Mailing No. 3, p. 2).

There was no indication that New York State Pollutant Discharge Elimination System (SPDES) permits were ever required for either of the R.E. Dietz facilities.

2.0 SITE HISTORY

2.1 Owners/Operators

R.E. Dietz became incorporated into the R.E. Dietz Company in early 1886, and conducted manufacturing activities at two locations in Syracuse, New York. R.E. Dietz is a wholly-owned subsidiary of Redco Holding Corporation. The R.E. Dietz facility on Wilkinson Street was acquired in 1903 from the Steam Gauge and Lantern Company. It was noted on the www.lanternnet.com website (this website is maintained by a distributor of R.E. Dietz products) that R.E. Dietz merged with the Steam Gauge and Lantern Company in 1897, and that the five-story Wilkinson Street plant was constructed in 1905. R.E. Dietz had acquired residential properties adjacent to the Wilkinson Street plant in the early 1900s, and incorporated them into the plant facility. The Wilkinson Street plant was owned by R.E. Dietz until November 7, 1994 when it was sold to Larry V. Losty, Jr. and Syracuse Business Center, Inc.

The second site was located on Wolf Street (Lot No. 21), and was purchased by R.E. Dietz in 1969, along with the lot adjacent to the Wolf Street building (Lot No. 20). The Wolf Street facility was originally acquired by the Howard Furnace Company in 1893. In 1910, the property was purchased by New York State Railways which later became known as Syracuse Transit Corporation. The plant was then sold to the Defense Plant Corporation in 1942 and leased to New Process Gear Corporation in 1951. New Process Gear became part of the Chrysler Corporation in 1957. It was noted that General Electric occupied part of the building during New Process Gear Corporation's ownership. Regarding the adjacent Lot No. 21, the New Hartford Company purchased this property in 1901 and sold it to an unspecified trading company in 1919. Cady Oil Company, Inc. purchased Lot No. 21 in 1927 and sold it to the Defense Plant Corporation in 1942. In 1969, Lot Nos. 20 and 21 were purchased by R.E. Dietz, and no additional owners for this property were indicated in the information that

was reviewed. It was not indicated whether the Wolf Street property is presently still owned by R.E. Dietz.

A Site Summary Report was previously prepared by TAMS for NYSDEC (TAMS, 2000) for the Wolf Street facility which was mainly based on information provided by the New Process Gear Corporation, or New Venture Gear (Company ID 2023, Site ID 367). New Venture Gear indicated that they conducted operations at the Wolf Street facility from the mid to late 1940s until the mid 1960s. Other details that were presented in the New Venture Gear report regarding this facility have not been re-stated in this Site Summary Report.

2.2 Site Operations

R.E. Dietz operated two facilities in the vicinity of Onondaga Lake: the Wilkinson Street facility (SIC code 3647, USEPA RCRA ID #NYD980787436); and the Wolf Street facility (SIC code 3647, USEPA RCRA ID #NYD173107947).

It was generally noted that when R.E. Dietz commenced manufacturing operations, "its product line consisted of kerosene lanterns. With the advent of the automobile, [R.E.] Dietz expanded its product line to include automotive lanterns. In the mid-1950s (approximately 1955 or 1956), [R.E.] Dietz moved its lantern production overseas" (Mailing No. 2, p. 1). Manufacturing operations were "changed to produce truck lighting assemblies, including head lamps, tail lights, directional lights, hazard lights, and reflectors. During a portion of its manufacturing history, [R.E.] Dietz also produced garage floodlights, road reflectors, and fire extinguishers." The basic production process for all of R.E. Dietz's products was similar: raw steel was "punched into appropriately sized sections and then shaped into the product form. That process required the application of oils to the steel to reduce stress and friction. The formed product required buffing and degreasing before the next stage of the manufacturing process which was plating or painting." Products were either plated (with

chrome, nickel, or zinc) and then rinsed with a water or water/acid solution, or painted by an electrostatic spray.

The processes specific to the two Syracuse facilities as described in R.E. Dietz's mailings are listed below. Details regarding the wastes that were generated, including storage and disposal methods, are provided in Section 2.3. The May 1990 Stearns & Wheler draft Phase I environmental site assessment (Mailing No. 1, Appendix 8), which was prepared for both R.E. Dietz facilities, contains much of the historical site information included herein.

Wilkinson Street Facility

The Wilkinson Street facility consisted of five floors, and the general site operations that were conducted on each floor are shown on the site maps that were provided (see Figures 5-9 herein). The facility was generally used for the manufacture of lighting assembly housings, materials storage, shipping and receiving, die casting, metalworking, and as a laboratory for quality assurance testing (Mailing No. 2, p. 1). The street access level was located on the second floor of the facility, and no site operations outside of the main building were discussed. Equipment and operations on the five floors of the Wilkinson Street plant as of April 6, 1990 (date the site maps were generated) included the following:

- *First Floor:* Three hot water tanks, sanitary sewer manhole, three gas fired boilers, two compressors, two flammable materials storage areas, warehouse and storage area, test laboratories, and die-casting area.

  The laboratories were used for optical and exposure testing of lighting products. The die-casters were used to manufacture aluminum parts and perform pipe threading.

- *Second Floor:* Electrical substation, assembly areas, empty drum storage, wastewater pre-treatment clarifier tank, two manholes which access a sewer lateral to Tracy Street, spent trichloroethene (TCE) disposal drums, scrap metal hoppers and rubbish

storage, heavy press machines, unidentified vent pipe, three loading docks, offices/employee area, print shop, enclosed and open parking area, water cascade-type cooling tower, and garbage dumpsters.

There was an overhead conveyor system that was used to move parts throughout the facility. The three loading dock areas at the Wilkinson Street plant that are used to receive and send shipments were located on the second floor, and they are as follows: the Leavenworth Avenue loading area east of the main building which was used for maintenance, receiving, and garbage disposal; the Assembly Annex loading dock west of the main building which was used to transport completed and packaged products from the plant; and the dock area in the central courtyard area which was used to store degreaser waste, empty drums, and wastes which were unidentified during the Stearns & Wheler April 1990 inspection (Mailing No. 1, Appendix 8, Phase I, p. 8). Cooling tower operations were not specified.

- *Third Floor:* Laboratory, light presses and general pressing areas, engineering offices, light assembly forming, tooling, wastewater treatment area, and a forging area.

Pre-treated wastewater was discharged to the Onondaga County Department of Drainage and Sanitation (OCDDS) sewer system, and then treated at the Syracuse Metropolitan Wastewater Treatment Plant (METRO). Generated wastewater and the OCDDS discharge permit are discussed in Section 2.3.

- *Fourth Floor:* Storage areas, paint waste storage areas, lathe/tool room, paint spray areas, overhead paint drying conveyors, wire room, wire storage, PCB transformer, paint line, and a non-PCB transformer.

The Wilkinson Street plant conducted its painting operations on its fourth floor, and it entailed the use of two electrostatic spray booths with automatic spray heads. An overhead conveyor carried the parts through each spray booth. A third "touch-up

booth" was also used when needed (Mailing No. 1, Appendix 8, Phase I, p. 10). Details were not provided regarding the Wilkinson Street plant's fourth floor forging activities as noted on Figure 7 herein.

- *Fifth Floor:* Paint line, baking oven, buffing/polishing, mixing lab, plating area, TCE degreaser, two paint spray booths, dry storage, phosphate cleaning, and plating materials storage.

  Paint drying conveyors were used on the fifth floor, and a conveyor system carried painted parts through a baking oven as part of the curing process. Plating operations involved the use of "several rows of heated metal dip tanks with individual ventilation units for each. The plating baths for chrome, nickel, and zinc [contained] cyanide, sulfuric acid, caustics, and specific metal plating reagents" (Mailing No. 1, Appendix 8, Phase I, p. 11). As of January 25, 1972, there were 78 plating tanks specifically used to plate nickel on brass and steel, and also to plate unspecified surfaces with aluminum and zinc (Mailing No. 2, Appendix 16, p. 000804). The TCE degreasing system which was situated on the fifth floor of the Wilkinson Street facility contained a dip/vapor-recovery tank, local ventilation, and a recovery and recycling unit in an adjacent floor pit. Perchloroethylene was used as a component of a "vapor degreasing operation" (Mailing No. 2, Appendix 16, p. 000520). A phosphate parts cleaning operation consisted of several rows of heated metal dip tanks. Parts were "cleaned and rust protected in caustic cleaner, cold rinse, then phosphoric acid," and the acid was collected in a holding tank until neutralized and discharged into the waste system.

On December 20, 1978, R.E. Dietz notified OCDDS that it intended to upgrade the existing system's chrome plating process, with the major difference being "air agitated counter flow rinses and the fog rinses" (Mailing No. 2, Appendix 16, pp. 000726-000729). As noted in Section 4.2.1, there was a spill of di-chromate solution in the plating area (reported to

OCDDS on February 1, 1983), and new counter flow rinses were subsequently added to the system to minimize the likelihood of this incident repeating. After the spill, measures were taken to prevent the same problem from reoccurring which included new counter flow rinses, new tank-to-tank drain boards, and the installation of a sampling tank and conductivity alarm system.

A chemical inventory of the Wilkinson Street facility was provided in R.E. Dietz's first mailing (Appendix 8, pp. 000218-000229). Stearns & Wheler noted that TCE was the "only chemical utilized by R.E. Dietz in a reportable quantity as of May 1990 (date of the Phase I environmental assessment). R.E. Dietz has indicated a SARA Title III reporting violation," however, details regarding this violation were not available at the time the Phase I environmental assessment was written (Mailing No. 1, Appendix 8, Phase I, p. 17). A summary of the Form R reportable quantities (RQs) of TCE during 1987 and 1988 was provided, and it was noted that the RQ for TCE was 10,666 lb in 1987, and 18,078 lb in 1988 (Mailing No. 1, Appendix 8, p. 000264). A copy of the Title III reporting form was provided in the first mailing, however, it is illegible (Mailing No. 1, Appendix 8, pp. 000210-000216).

As of September 1, 1991, R.E. Dietz had ceased operations of its "copper, nickel, [and] chrome electroplating lines, zinc phosphating line, zinc barrel plating line, and chrome and nickel rack strip lines" (Mailing No. 1, p. 2). Furthermore, as of November 1, 1991, processes associated with the Wilkinson Street plant's paint line had ceased. These dates were noted in a July 20, 1992 letter to NYSDEC from R.E. Dietz's Tom Gschwender (Mailing No. 1, Appendix 1, p. 000001). Closure remediation plans for the electroplating operations were provided to OCDDS on February 25, 1992 and were included in the second mailing (Appendix 16, pp. 000976-000985). All manufacturing operations had ceased by October 1, 1992 (date of an OCDDS inspection) except for the re-packaging of existing products (Mailing No. 2, Appendix 16, p. 000890). The site was sold on November 7, 1994.

Wolf Street Facility

Site operations at the Wolf Street facility were conducted on a main floor, a basement level, and along the building's exterior as shown on site maps that were provided by R.E. Dietz (Figures 10, 11, and 12 herein, respectively). The facility was generally used in the manufacture of lighting assembly housings, storage of finished products (approximately 50% of the site), plastic injection molding, and circuit board soldering (Mailing No. 2, p. 1). The site had been issued a USEPA RCRA ID number, however, in the third mailing, R.E. Dietz indicated that they "can offer no information regarding why" one had been issued because of the non-hazardous nature of the site's operations and waste generation. Equipment and operations at the Wolf Street plant were indicated on the submitted site maps (dated April 6, 1990) and included the following:

- *Main Floor:* Unoccupied office and storage, warehouse and storage, light manufacturing and assembly, offices, plastics area for injection molding, machine shop, garbage compactor, shipping and receiving for loading docks, and two decommissioned wave soldering ovens.

  First floor manufacturing and assembly area operations included using Conthane epoxy resin to permanently encase circuitry in resin. It was estimated that the application of resin required the use of approximately five gallons of methylene chloride annually.

- *Basement:* Crawl space area, coal storage, boiler room, compressor area, warehouse and storage, water-cooling treatment area, storage areas, plastic pellet grinding machines, loading dock area with overhead doors, unused nickel evaporator and treatment system, and two 12,000-gallon #6 fuel oil tanks.

  The basement level boiler room contained two main boilers, one decommissioned boiler, and a hot water tank. In the water-cooling treatment area, an automatic injection system was used to introduce treatment chemicals into the cooling tower on the main

floor. The specific materials that were used were "Isogard" and "Bacteriostat," both of which were "injected at regular intervals to control corrosion and bacterial growth" (Mailing No. 1, Appendix 8, Phase I, p. 14). It was also noted in the Phase I environmental assessment that the unused nickel evaporator/treatment system "may contain plating reagents and solvents in the piping and/or vessels," however, additional information regarding the system was not available for review.

- *Exterior:* Guard shack, sprinkler valve house, transformer, old transformer platform, limited access flammable materials storage shed, empty drums and equipment, storage shed, two dumpsters, used-sorbent drums, upside-down drums, cooling tower, loading docks, guard shack, and a sprinkler valve house.

  The equipment that is shown to the west of the main building in Figure 12 herein (including storage drums and a transformer) are situated on a concrete pad which is enclosed with a concrete wall.

There were waste transfer manifests provided in the first mailing for 1992 "plating line debris" shipments from the Wilkinson Street facility (Appendix 4, pp. 000055-000101). The generator USEPA ID number that was indicated for these wastes, however, was that of the Wolf Street facility (NYD173107947). Since there was no indication that plating operations were conducted at the Wolf Street facility, the USEPA ID number listed is assumed to be an error. This was reinforced in a February 4, 1994 biennial report from Wayne Disposal, Inc. regarding the aforementioned plating line debris shipment which was addressed to the Wilkinson Street facility (Mailing No. 1, Appendix 7, p. 000146).

Although the Wolf Street facility site maps that were available for review did not indicate that painting operations were conducted on-site, an unused 5-gallon pressurized paint sprayer was observed in storage in the southeast corner of the site's first floor during a site inspection (Mailing No. 1, Appendix 8, Phase I, p. 13).

When the Wolf Street site was owned by the Syracuse Transit Corporation in 1910, it was used as a trolley service facility. During New Process Gear's ownership of the Wolf Street facility, it was noted that General Electric occupied part of the building and manufactured radio components at this location (Mailing No. 1, Appendix 8, Phase I, p. 3). The two decommissioned wave soldering ovens which were located on the main floor were used by General Electric as part of their operations at the facility. During the Cady Oil Company, Inc.'s ownership of Lot No. 21, the facility was used as a "wholesale petroleum products business" (Mailing No. 1, p. 000002). Information regarding the facility's site operations prior to its ownership by R.E. Dietz (1969) was not available for review. It was indicated in the cover letter of Mailing No. 1 that all production processes had been terminated between September 1, 1991 and November 1, 1991.

During New Venture Gear's ownership of the Wolf Street facility from the mid to late 1940s until the mid 1960s, the site was used as a "cast iron machine plant" that manufactured transmission cases. This process generally involved receiving shipments of iron parts which were grinded, cut, and machined into finished products (TAMS, 2000).

2.3 Generation and Disposal of Wastes

Neither the Wilkinson Street nor Wolf Street facilities were listed in the New York State Registry of Inactive Hazardous Waste Disposal Sites at the time the May 1990 Stearns & Wheler Phase I environmental report was prepared. However, both facilities were issued USEPA generator numbers: the Wilkinson Street facility was NYD980787436; and the Wolf Street facility was NYD173107947 (Mailing No.1 , Appendix 8, Phase I, p. 17). As of May 1990, R.E. Dietz was still maintaining their generator status for both facilities.

Hazardous waste manifests, related invoices, and certificates of disposal were provided in Mailing Nos. 1 and 2 for hazardous wastes generated at both R.E. Dietz facilities for the years 1985 to 1994 (Mailing No. 1, Appendices 3-7; Mailing No. 2, Appendices 12-14). It

should be noted that portions of the Mailing No. 1 appendices were illegible and therefore not incorporated into this Site Summary Report. Types of hazardous wastes that were shipped off-site from the two facilities and the disposal facilities are noted in Table 1 herein. The individual shipment manifests provided in the aforementioned appendices are too numerous to incorporate into this table, however, shipment dates and quantities are indicated on the shipment manifests provided. The range of dates for these hazardous waste shipments is between December 18, 1986 and March 19, 1995.

The only waste disposal facilities that were used by R.E. Dietz, as noted in their mailings, that are located in the vicinity of Onondaga Lake, were Solvents & Petroleum Service, Inc. and Safety-Kleen Corporation. The Solvents & Petroleum facility is located at 1405 Brewerton Road, in the Town of Salina, in Onondaga County, New York (Company ID 2016, Site ID 249). The Safety-Kleen Corporation facility is located at 209 Factory Avenue in the Town of Mattydale, New York (Company ID 2013, Site ID 234).

For some data provided by R.E. Dietz, it was not specified to which of their two facilities the information was pertaining. For example, on page 2 of their second mailing, it was generally estimated that 2 to 3 drums of TCE were generated every few months during degreasing operations, and that there were never more than five drums on-site at one time. It was also noted that "approximately 220 drums of TCE waste" weighing 660 lb each, were generated and disposed off-site over a 19-year period (approximately 11½ drums per year). These wastes were likely stored at the Wilkinson Street facility because a spent TCE storage area was specified in the second floor site map (Figure 6). It should be noted that the records of TCE purchases, which were provided in Mailing No. 2, Appendix 11 (pp. 000293-000296), indicated a span of approximately 26 years, and not 19 years, from April 1959 to May 1985. Based on an employee interview, it was further estimated that "one barrel of waste sludge" was produced per month (Mailing No. 2, p. 2).

Table 1: Hazardous Wastes Generated by R.E. Dietz and Disposed Off-Site

Type of Hazardous Waste [1]	Disposal Location
Wilkinson Street Facility, Date Unspecified	
Flammable Paint, Paint Thinner (acetone, pigments, toluene)	Frontier Chemical Waste Process, Inc. Niagara Falls, NY
Wilkinson Street Facility, 1986	
Alkaline Cleaner Sludge, Copper Cyanide and Zinc Nickel Electroplating Sludge, Lead Chromate Sludge, Paint Waste	Frontier Chemical Waste Process, Inc. Niagara Falls, NY
TCE	Solvents & Petroleum Service, Syracuse, NY
Wilkinson Street Facility, 1987	
Alkaline Cleaner Sludge, Copper Cyanide and Zinc Nickel Electroplating Sludge, Lead Chromate Sludge, Paint Waste	Frontier Chemical Waste Process, Inc. Niagara Falls, NY
Waste Petroleum Naphtha	Safety-Kleen Corp, Syracuse, NY
TCE	Solvents & Petroleum Service, Syracuse, NY
Wilkinson Street Facility, 1988	
D007, F006, F008, F009	Cyanokem, Inc., Detroit, MI
D001, F008, F009, Flammable Liquids and Solids, Flammable Paint, Metal Hydroxide Sludge, Paint Thinner	Frontier Chemical Waste Process, Inc. Niagara Falls, NY
D001, D007, F006, F008, F009	Perk Chemical Company, Elizabeth, NJ
D007, F006, F009, Hydroxide Sludge, Lead Chromate, Metal Hydroxides (Nickel, Sodium, Potassium)	SCA Chemical Services, Inc., Model City, NY
TCE	Solvents & Petroleum Service, Syracuse, NY
Wilkinson Street Facility, 1989	
Illegible 40CFR261 Hazardous Waste Classification and USDOT description	Unspecified
F006, F008, F009, Electroplating Sludge	Cyanokem, Inc., Detroit, MI
Flammable Paint, Paint Thinner	Cycle Chem, Inc., Elizabeth, NJ
D001	Frontier Chemical Waste Process, Inc. Niagara Falls, NY
D007	SCA Chemical Services, Inc., Model City, NY
TCE	Solvents & Petroleum Service, Syracuse, NY
Wilkinson Street Facility, 1990	
Waste PCBs	Aptus, Coffeyville, KS
F006, F009, Dry Waste Cyanide Mixture, Electroplating Sludges	Cyanokem, Inc., Detroit, MI
Flammable Liquids and Solids, Paint Waste, Waste Petroleum Mixture, Electroplating Sludges	Cycle Chem, Inc., Elizabeth, NJ
TCE	Solvents & Petroleum Service, Syracuse, NY
Metal Hydroxide Sludge, Zinc Nickel Sludge	Stablex, Inc., Providence, RI

Table 1: Hazardous Wastes Generated by R.E. Dietz and Disposed Off-Site (Continued)

Type of Hazardous Waste [1]	Disposal Location
Wilkinson Street Facility, 1991	
Copper Cyanide Sludge, Chrome Electroplating Sludge, Speedi-Dry Absorbent, Paint Waste	Cycle Chem, Inc., Elizabeth, NJ
F006, Paint Waste	Remtech Environmental, Lewisberry, PA
Waste Petroleum Naphtha	Safety-Kleen Corp, Syracuse, NY
Alkaline Cleaner Sludge, Copper Cyanide and Zinc Nickel Electroplating Sludges, Metal Hydroxide Sludge, Nickel Hydroxide Sludge	Stablex, Inc., Providence, RI
Wilkinson Street Facility, 1992	
Chromium and Lead-Based Paint Solids, Gasoline, Kerosene, Leaded Oil Sludge, Lead Sludge, Mixed Solvents (Acetone, MEK, Toluene), Nickel Anode Bags, Nickel Sludge, Paint, Sodium Hydroxide, TCE	Clean Harbors of Braintree, Inc., Braintree, MA
D001, D019, U080, Isocyanide Resin, Aerosols, Potassium Hydroxide	Clean Harbors of Natick, Inc., Natick, MA
Plating Line Debris	Michigan Disposal, Inc., Belleville, MI
Wilkinson Street Facility, 1993	
D002, F006, Chromic Acid, Copper Cyanide, Hydrochloric Acid, Sulfuric Acid	Stablex Canada Inc., Blainville, Quebec
Wilkinson Street Facility, 1994	
F002	Envotech, Belleville, MI
1,1,1-TCA, Acetic Acid, Aerosols, Alkaline Accelerator, Ammonium Hydroxide, Ammonium Hydrogen Fluoride, Asbestos, Barium Salts, Chromic Acid, Chromium Oxide, Chromium Trioxide, Copper Cyanide, Copper Nitrate, Dichlorodifluoromethane, Dihydrogen Phosphate, Duchrome, Epoxy, Freon, Hydrochloric Acid, Hypochlorite Solutions, Ink, Lime, Methanol, Methylene Chloride, Mineral Spirits, Naphtha, Nickel, Paint, Petroleum Distillates, Phosphoric Acid, Poisonous Chrome Wastes, Poisonous Labpack, Potassium Hydroxide, Sodium Chromate, Sodium Cyanide, Sodium Hydroxide, Sodium Hydroxide Dessicant, Sodium Nitrate, Sulfuric Acid, Toluene, Varnish, Waste Oil (regulated in Missouri), Xylene, Zinc Acid	Essex Waste Management Services, Inc. Kingsville, MO
Wolf Street Facility, 1995	
Asbestos Containing Materials	Kelly Run Sanitation, Elizabeth, PA

Sources: R.E. Dietz, September 10, 1996, Mailing No. 1, Appendices 3-7; Mailing No. 2, Appendices 12-16.
Notes: 1 = 40CFR261 Hazardous Waste Classification is noted if a specific USDOT description was not available.

The disposal protocol for spent caustic cleaners was provided in the second mailing, and since the specific facility in question was not indicated, it is assumed that the protocol pertains to both the Wilkinson and Wolf Street facilities (Appendix 16, pp. 000466-000467). The spent caustic cleaner was treated with Kleer-Aid 30X prior to discharge, and it was estimated that one gallon of treated caustic cleaner was generated per 30 gallons of effluent prior to discharge into the wastewater treatment system.

An analysis was performed on samples collected from storage drums in 1993, after R.E. Dietz ceased operations (Mailing No. 1, Appendix 9, pp. 000269-000280). In the documents reviewed, it was not indicated for which of their two facilities these drums were collected. However, PCB Aroclors were not detected in two oil samples and one liquid sample that were collected from two different drums. It should be noted that the detection levels for these PCB samples differed by a factor of ten (2 mg/kg and 20 mg/kg) and is possibly a misprint (Mailing No. 1, Appendix 9, pp. 000270, 000272-000273). Of the metals which were analyzed, only cadmium (0.015 mg/L) and silver (0.068 mg/L) were detected. The only volatile organic compound (VOC) that was detected was methyl ethyl ketone at 70,000 mg/L.

Wilkinson Street Facility

The R.E. Dietz Wilkinson Street facility generated the following types of hazardous wastes: waste paints and paint thinners; alkaline cleaner sludge; electroplating sludge waste including metal hydroxides; and waste petroleum, naphtha, and TCE (see Table 1). The Waste Material Profile Sheets that were provided by R.E. Dietz in Appendix 4 (pp. 000043-000053) identified waste types, as well as the specific process operations that generated them. They are as follows: waste copper cyanide solution (identified as a poisonous substance) and nickel-contaminated anode bags generated during electroplating operations; chromium and lead-based paint wastes accumulated during the cleaning of facility paint baths; hazardous treatment sludge containing lead and nickel generated by the on-site water treatment system; spent acetone, isopropanol, methyl ethyl ketone, and toluene generated during operations

involving solvents; lead sludge and solids generated during painting operations; gasoline and kerosene generated during the emptying of storage tanks; and spent TCE from degreasing operations. It was also noted that between five and seven 55-gallon drums of glycol-based fire resistant fluid and one 55-gallon drum of sodium hydroxide cleaner were shipped off-site on April 22, 1992, however, the processes generating these wastes were not indicated (Mailing No. 1, Appendix pp. 000043, 000052).

In addition to the aforementioned waste-generating operations (i.e., electroplating, painting, the use of solvents, and the on-site wastewater treatment), there are other site operations shown on the site maps (Figures 5-9 herein) which also possibly generated hazardous wastes. These include die casting operations on the first floor; first and third floor laboratories, and phosphate cleaning conducted on the fifth floor.

R.E. Dietz pre-treated its wastewater prior to its discharge to the OCDDS sewer system. The facility's pre-treatment wastewater facility was completed prior to November 26, 1985, when R.E. Dietz notified OCDDS of its finished construction (Mailing No. 2, Appendix 16, p. 000642). It was not indicated whether wastewater was pre-treated prior to November 1985. OCDDS was notified in an October 7, 1991 letter from R.E. Dietz that all production processes that use their wastewater pre-treatment facility were "shut down" as of September 1, 1991 (Mailing No. 2, Appendix 16, p. 000849). The description which follows was provided in the second mailing (Appendix 16) and is written in the present tense, although facility operations have since been terminated. Pre-treatment started in the "collection area on the 4th floor. All piping from the plating operations runs from the 5th floor to the central collection area, then to the 3rd floor chrome reduction, CN destruct and acid/alkaline pH adjustment tanks ... From there, wastewater is piped to a clarifier on the 2nd floor. Precipitated sludge is drawn off of the tank bottom, concentrated with a centrifuge and loaded into 55 gallon drums. Water removed by the centrifuge is pumped into the acid/alkaline tank and recycled through the system. Effluent from the clarifier is discharged to the sewer" (Mailing No. 2, Appendix 16, p. 000521).

There were process changes made to the facility's wastewater pre-treatment system which were described in the submitted mailings. It was indicated in a January 30, 1991 letter from R.E. Dietz to OCDDS that there was a clean-up and upgrade on the on-site treatment system between July and December 1990 which temporarily increased the biannual quantity of generated waste treatment sludge from an average of 8,000 to 10,000 lb, up to 31,000 lb (Mailing No. 2, Appendix 16, p. 000418). A list of specific system upgrades (which were both completed and pending) was provided, and included an automatic gravity filtration system, conical tank, filter bed for the zinc phosphate wastewater line, vibratory finishing system, and the addition of the capability for a closed loop system to allowing "the proper reprocessing of waste water" (Mailing No. 2, Appendix 8, pp. 000428-000429). These upgrades are discussed in the following two documents: an October 1, 1990 draft letter from R.E. Dietz to OCDDS which addressed failures to comply with OCDDS wastewater discharge limitations; and a September 24, 1990 draft report that was prepared by Mr. Arthur O'Hara for R.E. Dietz (Mailing No. 2, Appendix 16, pp. 000484-000492). The upgrades were scheduled to be completed between November and December 1990 (Mailing No. 2, Appendix 16, p. 000468). As of January 23, 1991, the overhaul of the pump system was completed, thereby allowing a closed loop system (Mailing No. 2, Appendix 16, p. 000429).

Prior to the issuance of an OCDDS industrial wastewater discharge permit (discussed in the Facility Permits subsection below), R.E. Dietz notified OCDDS on June 20, 1977 that the facility's operations had been "changed to completely eliminate cyanide" in effluent wastewater, however, the details of the change were not available for review (Mailing No. 2, Appendix 16, p. 000751). Other changes to the system included upgrades to minimize the discharge of nickel and zinc to the OCDDS sewer system. Elevated contaminant levels which were detected in the generated wastewater released into the OCDDS sewer system are discussed in Section 4.1.

It was indicated in a January 25, 1972 plant inspection report that cooling water was discharged from the facility at approximately 173,000 gallons per month (Mailing No. 2, Appendix 16, p. 000804). There were 78 plating tanks which were "dumped once every year" and "thoroughly diluted" prior to discharge to the OCDDS sewer system. Boiler blowdown occurred every morning, and is also assumed to have been discharged to the sewer.

On November 10, 1975, an upgrade was being made to the chrome and nickel-plating tanks "to accumulate dragout and to return it to the plating tanks" (Mailing No. 2, Appendix 16, p. 000767). The purpose of the upgrade was to decrease the amount of chrome and nickel discharged to the wastewater "by about 80%."

PCB transformers were decommissioned in November 1989, and the PCB-contaminated wastes were then removed from the facility for disposal at an unspecified location (Mailing No. 1, Appendix 8, Phase I, p. 17). There was a Generator Annual Report provided in R.E. Dietz's second mailing (Mailing No. 2, Appendix 14, p. 000343) regarding a March 1, 1990 shipment of waste PCBs to a facility known as Aptus in Coffeyville, Kansas, however, it was not indicated whether these PCB wastes resulted from the aforementioned November 1989 decommissioning.

Wastes that were generated at the Wilkinson Street site and were described as non-hazardous in the waste shipment reports provided (Mailing No. 1, Appendices 3, 4, and 6) include the following: asphalt; clay; clay and kaolin solution; epoxy coating; glycol-based hydraulic fluid; grease; latex; magnesium and zinc metal wastes; non-hazardous surfactants; non-regulated surfactants; oily debris; personal protective equipment; polishing soap compound; propylene glycol; and a solid waste petroleum mixture.

During an October 1, 1992 inspection of the facility, it was observed that manufacturing operations had ceased except for limited re-packaging, and "all piping was disconnected from the sewer" (Mailing No. 2, Appendix 16, p. 000890).

A summary of storage areas, including the types of stored materials, was provided in the May 1990 Stearns & Wheler Phase I environmental assessment (Mailing No. 1, Appendix 8, Phase I, pp. 6-12) and is presented in Table 2 herein. R.E. Dietz also provided specific data regarding Wilkinson Street site storage facilities and other waste management practices, which are discussed below:

- *Second Floor:* There are two second floor manholes which access a lateral connected to the Tracy Street sewer system. The only evidence that was available for review regarding the discharge of wastes into these manholes were elevated photoionization detector (PID) readings which are discussed in greater detail in Section 4.2.1. The second floor has settling tanks to where sludges from the third floor plating area are transported. The sludges were collected in drums, and at the time of an April 1990 inspection, there were three drums of sludge observed. One 20,000-gallon steel underground storage tank (UST) containing #6 fuel oil was decommissioned by Environmental Oil, Inc. in approximately 1988, however, the tank's location was not indicated in the documents reviewed (Mailing No. 1, Appendix 8, Phase I, p. 16). As of May 1990 (date of the Phase I environmental assessment), the second floor courtyard area, was "marked as being used exclusively for empty drum storage" (Mailing No. 1, Appendix 16, Phase I, p. 8). However, several completely full drums were observed at the time of the April 1990 Stearns & Wheler inspection. It was noted that the length of time the drums were stored in the courtyard area was undeterminable because there were no dated labels.

Table 2: Summary of R.E. Dietz Wilkinson Street Facility Storage Areas

Storage Area	Stored Materials [1] and Storage Containers
First Floor	
Compressor Room	a) Oil and lubricating fluid storage containers. b) Oil supply tank. c) Several 55-gal drums of caustic soda and wastewater treatment chemicals.
First Flammable Materials Storage Area	a) Drums and pails of Solvesso, vehicle oil, waste oil, transformer oil, paints, and liquid nickel chloride.
Caged Storage Area	a) Drums of TCE product (55-gal) and polyester enamel reducer. b) Cardboard boxes of solid raw materials.
Second Flammable Materials Storage Area	a) Paints, enamels, thinners, acrylics, and lacquers stored on shelves.
Die-Casting Area	a) Hydraulic oil and lubricating oil in unspecified containers.
Second Floor	
Wastewater Treatment Area	a) Three drums of treated F006 electroplating waste. b) Wastewater settling tanks collected wastewater sludges prior to being placed into drums.
Two Scrap Metal Hoppers	a) Scrap metal discharged through overhead disposal chute.
Couryard Wooden Drum Dock Area	a) Five 55-gal drums of waste TCE.
Courtyard Dock Area /Empty Drum Storage Area	a) Several dozen 55-gallon drums, many of which were observed to be full.
Leavenworth Avenue Loading Dock	a) Three garbage dumpsters. b) Eight compressed gas cylinders (marked empty).
Third Floor	
Laboratory Area	a) Bottles, jars, and flasks of unspecified analytical reagents.
Fourth Floor	
Storage Area	a) 55-gal drums and 5-gal pails of solvents products (incl. Butylcarbinol, MEK, Reducer, Solvesso, and Xylol) and unspecified materials (containers were unmarked). b) Twenty 55-gal drums of hazardous-labeled paint waste (drums lacked accumulation start and completion dates).

Table 2: Summary of R.E. Dietz Wilkinson Street Facility Storage Areas (Continued)

Storage Area	Stored Materials [1] and Storage Containers
Fifth Floor	
Buffing/Polishing Area Storage Room	a) Plating supplies were stored in both open and closed containers, and included nickel additive, potassium chloride, boric acid, chromic acid, "RB Degreaser," potassium copper cyanide, and "Du-Chrome." Some containers were deteriorated.
Plating Area	a) Several 55-gal drums marked as hazardous waste, many of which had 1989 accumulation start dates.
TCE Degreasing System	a) Several 55-gal drums of TCE.
Two Paint Spray Booths	a) Several 55-gal containers of MEK, Solvesso, and Xylol.
Phosphate Parts Cleaning	a) Fiber drums of unspecified powdered cleaning agents.

Source: R.E. Dietz, 1996, Mailing No. 1, Appendix 8, Phase I report.
Notes: 1 = Stored waste quantities and types of storage containers, if available, were noted in an April 1990 site inspection which was conducted by Stearns & Wheler.

- *Third Floor:* The third floor of the Wilkinson Street facility contained "several large collection/reaction vessels for the different wastewater types generated on the upper floors," including pre-treated plating waste sludge (waste type F006) (Mailing No. 1, Appendix 8, Phase I, p. 10). Process lines transported third floor plating wastewater to the second floor settling tanks where the sludges were collected in drums.

- *Fourth Floor:* The painting operations on the Wilkinson Street plant's fourth floor generated approximately one 55-gallon drum of liquid waste paint solvents every 5 to 6 weeks, and approximately two 55-gallon drums of solid paint waste (paper sheeting and tape) every 12 to 15 days (Mailing No. 1, Appendix 8, Phase I, p. 10).

- *Fifth Floor:* A copper pipe and hose were used to discharge waste solvent from the fifth floor degreaser to the drum dock on the second floor. It was indicated in the Phase I environmental assessment that "there was no evidence that scrap metal pieces [were] cleaned of oil and solvents prior to disposal in the hoppers" (Mailing No. 1, Appendix 8, Phase I, p. 8). The method of disposal for phosphate wastes associated with phosphate parts cleaning operation on the fifth floor was described as "unknown" in the Stearns & Wheler Phase I environmental assessment (Mailing No. 1, Appendix 8, Phase I, p. 12). A USEPA Tier II reporting form indicated that nitric acid, potassium cyanide, and sulfuric acid were used and stored in the fifth floor plating area (Mailing No. 1, Appendix 8, Phase I, p. 18; Appendix 8, p. 000217). It is possible that these three materials were among the plating area drummed wastes in the second floor courtyard dock area which were not specifically identified (see Table 2). The fifth floor chrome buffing and polishing process was observed to have "no operating local exhaust for particulates and solvents that become airborne," thereby creating a visible quantity of chrome particulates in the area (Mailing No. 1, Appendix 8, Phase I, p. 11).

Wolf Street Facility

In their third mailing, R.E. Dietz indicated that there were no process wastes to be disposed of from the Wolf Street facility. This was because the facility "was used for warehouse storage and plastic injection molding" (Mailing No. 3, p. 2). In addition to storage and plastic injection molding, there are other site operations shown on the site maps which were provided (Figures 10-12), which could have potentially generated waste to be disposed. These include wave soldering ovens which were described on the Wolf Street facility main floor site map as "decommissioned," and the following basement systems: a water-cooling treatment area; a plastic grinding area; and a nickel evaporator/treatment system which was described as "unused" (Mailing No. 1, Appendix 8, Phase I, pp. 13-15). Specific descriptions of the wastes that were generated during the aforementioned operations were not provided in the documents reviewed.

The Wolf Street facility discharged wastewater into the OCDDS sewer system, however, a permit to discharge was never issued as noted in the Facility Permits section below. A January 4, 1972 Industrial Waste Disposal Questionnaire indicated that Wolf Street facility wastewater that was discharged into the sanitary sewer (which included sanitary, cooling, and boiler feed wastes) contained "small quantities [of] metals and chemicals from plating rinse tanks" (Mailing No. 2, Appendix 16, pp. 000797-000800). Also, there was occasional wastewater dilution prior to its discharge in the event that the "plating or cleaning tank is dumped."

The Wolf Street facility storage areas that were shown on the provided site maps are as follows:

- *Main Floor:* Warehouse and storage areas. During a Phase I inspection of the facility in April 1990, it was noted that there was an unspecified quantity of 55-gallon drums of lubricating oil and Conthane Part B epoxy resin stored in the first floor plastics

plant area (Mailing No. 1, Appendix 8, Phase I, p. 13). The materials stored in the first floor office area storage room were not specified in the documents that were available for review. A 55-gallon drum of Conthane epoxy resin was stored in the manufacturing and assembly area on the first floor.

- *Basement:* Plastic and coal storage areas, a warehouse and storage area, and two 12,000-gallon #6 fuel oil tanks. The two steel fuel oil tanks were scheduled to be decommissioned in the summer of 1990 (Mailing No. 1, Appendix 8, Phase I, p. 16), however, their current conditions were not indicated in the R.E. Dietz 1996 and 1998 mailings. During a Phase I inspection of the facility in April 1990, it was noted that there were "several" 55-gallon drums of motor oil and hydraulic oil in the compressor area.

- *Exterior:* Drum storage areas, dumpsters, storage shed, limited access storage shed, and flammable materials storage shed. On the concrete pad adjacent to the main building, there were numerous storage areas, including a flammable materials storage shed which Stearns & Wheler was not permitted to enter during their Phase I investigation. The storage shed was filled with refuse material and, it was determined, was unsafe to enter. There were two unlabeled, undated, and unsealed 55-gallon drums of used Speedi-Dry absorbent on a pallet adjacent to the storage shed. In the vicinity of the cooling tower, six uncapped and unmarked drums of unspecified capacities were turned upside-down. PID readings were taken of the drums, and the readings were measured below background levels (suggesting stored wastes were not volatile). It was also noted that PID readings were obtained from nearby soil, and levels were below background concentrations. It was not indicated in the documents that were available for review, how or from where the soil sample was collected because it was mentioned in the R.E. Dietz mailing that the cooling tower area (and the other exterior equipment) was situated on a concrete pad. Specifically, it was not mentioned whether there were cracks in the concrete, whether

a new hole was made, or if the samples were collected adjacent to the concrete pad (to the north or west). Several unmarked and sealed 55-gallon drums were located on the concrete pad adjacent to the flammable materials storage shed.

Facility Permits: Wilkinson Street Facility

R.E. Dietz maintained an OCDDS Industrial Wastewater Discharge Permit (Permit No. 20) for the Wilkinson Street facility for the discharge of "pre-treatment effluent from the electroplating process, di-chromate and phosphate operations, and paint stripping facility," sanitary wastewater, and non-contact cooling water (Mailing No. 1, Appendix 8, p. 000199). In the most recent permit which was valid between April 22, 1991 and April 22, 1993, pre-treated effluent from vibratory tumbler operations was added to the aforementioned list of authorized waste discharges. As noted earlier, construction of the facility's pre-treatment wastewater facility was completed prior to November 26, 1985 (Mailing No. 2, Appendix 16, p. 000642). The specific pre-treatment operations that were performed at the pre-treatment facility (based on a January 21, 1986 OCDDS Industrial Investigation Report) were "chrome reduction, CN [cyanide] destruct, pH adjustment, [and] metal sludge" precipitation (Mailing No. 2, Appendix 16, p. 000640). It was noted in a May 5, 1987 letter from OCDDS to R.E. Dietz that the Wilkinson Street facility had been operating without a valid OCDDS discharge permit from August 1, 1985 to at least May 5, 1987 (Mailing, No. 2, Appendix 16, p. 000633). Permit discharge limits and wastewater data are discussed in Section 4.2.1 herein.

Discharge permits were provided for the periods from August 1, 1977 to August 1, 1985 (Mailing No. 2, Appendix 16, pp. 000676-000681, 000741-000748), November 1, 1987 to November 1, 1990 (Mailing No. 1, Appendix 8, pp. 000198-000208), and April 22, 1991 to April 22, 1993 (Mailing No. 2, Appendix 16, pp. 000381-000390). Explanations for the time gaps were not provided in the documents reviewed. A November 16, 2000 letter from OCDDS to R.E. Dietz indicated that the Wilkinson Street facility would be authorized for

wastewater discharge until OCDDS had an opportunity to complete a review of wastewater data (Mailing No. 2, Appendix 16, p. 000455). However, the results of the OCDDS review, if one was completed, were not included in the documents reviewed. The OCDDS permits regulated concentrations of the following parameters: cadmium, chromium, copper, total cyanide, lead, nickel, silver, total toxic organics, and zinc.

Between January 1990 and June 1990, it was estimated that 7,500 lb of electroplating sludge and 6,500 lb of waste treatment sludge were discharged to the OCDDS sewer system (Mailing No. 2, Appendix 16, p. 000437). It was also estimated that approximately 1,500 lb of electroplating sludge and 31,000 lb of waste treatment sludge were discharged into the OCDDS system between July and December 1990, with a normal discharged waste treatment sludge quantity of 8,000 to 10,000 lb over a typical 6-month period (Mailing No. 2, Appendix 16, p. 000418).

It was indicated that there were five Wilkinson Street facility outfalls to the OCDDS sewer system which was serving as a combined sewer system in the area (Mailing No. 2, Appendix 16, p. 000414). However, during an OCDDS inspection of the facility, it was noted that Mr. Dave Zintek of R.E. Dietz only knew of one discharge point to the sewer system (sewer 4), but that the matter would be investigated further (Mailing No. 2, Appendix 16, p. 000521). The result of the additional investigations were not available for review. It was indicated in an August 7, 1990 letter from OCDDS to R.E. Dietz that a "plumbing floor plan showing all process and sanitary lines within the facility and all points of discharge to the municipal sewer system" should have been submitted to OCDDS (Mailing No. 2, Appendix 2, p. 000504), however, these floor plans were not available for review. A February 24, 1986 memo from OCDDS to R.E. Dietz noted that the location of sample collections which had been conducted at "manhole #3" was being changed to the "newly designated manhole #4" which only received effluent from the pre-treatment facility (Mailing No. 2, Appendix 16, p. 000639). It is not apparent from the documents reviewed whether manhole 4 refers to the

aforementioned sewer 4. An un-dated Onondaga County Industrial Wastewater Survey indicated that sewer 3 was one of the two courtyard manholes shown on Figure 6 herein.

The Wilkinson Street facility maintained NYSDEC air permits for the discharge of "organic solvents, paint thinner, plating tank liquid mists, sulfuric acid [from the facility's "oxide removal zinc die castings"], nitric acid [during plating operations], hydrogen chloride [during plating operations], paint spray particulates, grinding and buffing particulates, trichloroethylene and zinc fume" (Mailing No. 1, Appendix 8, Phase I, p. 18; Appendix 8, pp. 000231-000244). These air emission permits were included as an attachment with the Stearns & Wheler Phase I environmental assessment (Mailing No. 1, Appendix 8, pp. 000186-000195). The permits were issued on October 9, 1987 and their date of expiration was October 9, 1992.

It was not indicated in the documents reviewed whether a SPDES permit had ever been issued for the Wilkinson Street facility. Three NYSDEC Industrial Chemical Surveys prepared by R.E. Dietz were provided, which indicated that the facility did not possess a SPDES or NPDES (National Pollutant Discharge Elimination System) permit, however, these surveys were un-dated (Mailing No. 2, Appendix 16, pp. 000705-000710).

Facility Permits: Wolf Street Facility

R.E. Dietz noted that the Wolf Street facility outfalls discharged to the sanitary sewer (Mailing No. 2, Appendix 16, p. 000415) and that no permits had been issued for these discharges.

It was not indicated in the documents reviewed whether SPDES or air emissions permits had ever been issued for the Wolf Street facility.

3.0 POTENTIAL PATHWAYS FOR RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

3.1 Soil

Soil on the R.E. Dietz sites could have been contaminated directly from on-site waste disposal and spills that occurred during chemical and waste storage, transportation, and handling. R.E. Dietz indicated in their first mailing that according to the Phase I environmental assessment that was prepared by Stearns & Wheler, "no reported spill incidents were identified for the Wilkinson Street facility and one incident occurred at the Wolf Street facility on July 26, 1989" (Mailing No. 1, pp. 2-3). The July 26, 1989 spill, as well as other contaminant releases to the environment, and a discussion on possible sources of soil contamination are discussed below. There were no soil boring results available for either facility.

As shown in Table 2 herein, there were numerous hazardous waste storage areas inside the Wilkinson Street facility. However, the Wilkinson Street plant's first floor (or basement level), had concrete foundation floors (Mailing No. 1, Appendix 8, Phase I, p. 6). Although there was a risk of spilling hazardous materials onto the floor surfaces of the building's five floors, soil does not likely present a pathway of release into the Onondaga Lake system. This is because there were no indications that the concrete foundation was not in a structurally sound condition.

The Wilkinson Street plant facilities that were situated outside of the main building to the east, west, and north, were two loading docks, an assembly annex, enclosed and open parking areas, cooling tower, garbage collection area, and offices/employee area (Figure 6). The southern end of the building extends to Tracy Street. The facility is horseshoe-shaped, and it was not noted in the documents that were available for review, whether the central area was completely covered with an impermeable surface. The central courtyard area was used

to store degreaser waste and drums, so if the area was partially permeable, the soil could have been contaminated in the event of a spill. The area is zoned industrial and there does not appear to be any grassed areas adjacent to the facility which is bordered by roadways to the north, east, and south.

Sewer inspection logs were provided for the Wilkinson Street facility which indicated numerous structural deficiencies (e.g., cracks) (see Section 3.5). Contaminated wastewater being transported through deteriorated pipes could have been a pathway for soil contamination.

Exterior of the Wolf Street facility, there was a concrete pad enclosed with a concrete wall to the west of the main building. Storage areas and equipment that were situated on the pad are described in Section 2.3. The floor of the main building was also constructed with concrete. No comments were included in the Stearns & Wheler Phase I environmental assessment regarding the concrete floor and pad's structural integrity. It was noted, however, that an empty conduit ran into the exterior area's concrete slab to the former transformer unit. If enough of a gap developed between the conduit and the surrounding concrete, this could have created a potential pathway for contamination of the soil. On July 26, 1989, it was noted that a 40-gallon fuel oil spill (discussed in Section 4.1) contaminated the underlying soil (Mailing No. 1, Appendix 8, Phase I, p. 16). It was not indicated in the documents that were available for review whether the exterior area was completely lined with concrete or whether it was installed prior to the spill.

3.2 Surface Water

The R.E. Dietz Wilkinson Street facility is located approximately 7,000 feet southeast of Onondaga Lake, 3,000 feet south of the Barge Canal, and 1,500 feet west of Onondaga Creek. The Wolf Street facility is located approximately 5,000 feet northeast of Onondaga Lake and 2,000 feet southeast of Ley Creek. There is a Class II wetland located less than ¼

mile west of the Wolf Street facility. Contaminated stormwater runoff from the Wilkinson Street and Wolf Street facilities is a potential source of pollutants to off-site surface waters. Preventive measures to limit runoff contamination, if any, were not identified in the mailings. As noted in Section 1.4, surface water runoff from both sites generally flows toward storm drains located along the streets adjacent to each property (Mailing No. 1, Appendix 8, Phase I, p. 4). There were also floor drains on the bottom floors of both facilities which received rainwater from roof drains (Mailing No. 3, p. 2). SPDES permits were not provided for either facility and there was no indication in the mailings that industrial wastewater was ever discharged to on-site or off-site surface waters.

Outdoor materials storage and handling facilities (e.g., Wilkinson Street and Wolf Street facility loading areas, and the Wilkinson Street facility courtyard area) may serve as sources of off-site contamination if stormwater comes into contact with stored or spilled contaminants. Parking areas which are assumed to be paved are shown in Figures 3 and 4. Since the facility's loading/unloading operations were not described in the R.E. Dietz mailings, their environmental impacts, if any, cannot be assessed. It was not indicated in the documents reviewed whether the Wilkinson Street facility diverted stormwater into its on-site manholes (including those shown on Figures 5 and 6). Aside from a loading dock area, the only potential outdoors materials storage and handling areas at the Wolf Street site are within a concrete walled area west of the main building (see Figure 12). The structural integrity of this wall, and the discharge point(s) of stormwater runoff collected in this walled area, if any, were not indicated in the documents available for review.

Exposed areas of contaminated soil can also be sources of contamination to surface water, however, there were no areas of contaminated soil which were exposed for extended periods of time discussed in the documents reviewed. There were no surface water data available for review for either facility.

3.3 Groundwater

R.E. Dietz did not provide any groundwater data for their two facilities. Groundwater beneath the Wilkinson Street and Wolf Street facilities can be contaminated directly from leaching of contaminants from the facility's storage and disposal activities. Based on the information that was reviewed, there were no chemicals stored or handled in areas which were un-paved. Based on the documents that have been reviewed, it is unlikely that a significant pathway existed for migration of pollutants into groundwater.

3.4 Air

Air emissions represent a local source of contaminants to the atmosphere with potential deposition to the ground surface and subsequent transport to nearby surface water bodies. As noted in Section 2.3, the Wilkinson Street facility maintained NYSDEC permitted air emission points for the discharge of organic solvents, paint thinner, plating tank liquid mists, sulfuric acid, nitric acid, hydrogen chloride, paint spray particulates, grinding and buffing particulates, TCE and zinc fume. The only permits which were provided were valid between October 9, 1987 and October 9, 1992, and it was not indicated whether there had been any changes to the air emission processes since operations began in 1903. Based on a NYSDEC SARA Title III Toxic 1989 Chemical Release Inventory Data form for the Wilkinson Street facility, the two toxic chemicals that were released to the environment were TCE (26,110 lb/yr point source emissions and <500 lb/yr non-point source emissions) and xylene (16,842 lb/yr point source emissions and <500 lb/yr non-point source emissions) (Mailing No. 2, Appendix 16, p. 000481). In the 1990 Sara Title III form that was provided, the only toxic release was for TCE and the estimate of point source emissions was decreased to 21,701 lb/yr (Mailing No. 2, Appendix 16, p. 000850).

In the Stearns & Wheler Phase I environmental assessment, it was observed that the Wilkinson Street facility's first floor flammable material storage vault, which was used to

store oils, paints, and solvents, was not ventilated (Mailing No. 1, Appendix 8, Phase I, p. 7). The potential for air contamination to be released from this vault was therefore minimal. Volatile organic compound concentrations at this and other locations in the facility were quantified with PID, and the results are discussed in Section 4.2.1. There were no operating local exhaust discharge points for particulates and solvents that become airborne as a result of the Wilkinson Street plant's fifth floor chrome buffing and polishing process. For this reason, there was a "visible level of chrome particulates" observed during an April 1990 inspection (Mailing No. 1, Appendix 8, Phase I, p. 11).

In general, during the site inspection, airborne "volatile organic vapor levels, metal particulate levels and acid mist levels observed within the Wilkinson Street facility" were found to be at elevated concentrations (Mailing No. 1, Appendix 8, Phase I, p. 20). It was noted that "stained and clogged roof-mounted ventilation ducts and staining of the roof surface beneath the duct at the Wilkinson Street facility" were observed.

There was a wave soldering machine on the first floor of the Wolf Street facility which was equipped with a local exhaust system (this system was operational during an April 1990 Phase I site inspection). However, the route of ventilation for this system could not be identified during the inspection. NYSDEC air emission permits were not provided for the Wolf Street facility, and it was not indicated whether such permits were ever issued.

3.5 County Sewer System

OCDDS Industrial Waste Discharge Permits were provided for the Wilkinson Street facility for the periods from August 1, 1977 to August 1, 1985 (Mailing No. 2, Appendix 16, pp. 000676-000681, 000741-000748), November 1, 1987 to November 1, 1990 (Mailing No. 1, Appendix 8, pp. 000198-000208), and April 22, 1991 to April 22, 1993 (Mailing No. 2, Appendix 16, pp. 000381-000390). Based on the facility's OCDDS discharge permits, R.E. Dietz discharged pre-treated effluent from the electroplating process, di-chromate and

phosphate operations, and paint stripping facility, sanitary wastewater, non-contact cooling water, and the vibrator tumbler operation (Mailing No. 2, Appendix 16, p. 000382).

The locations of the piping connections from the facility to the municipal sewer system were not indicated, however, it was noted that floor drain systems which discharged to the OCDDS sewer system were present at the Wilkinson Street facility on the first, third, and fifth floors. In particular, a floor drain was observed in the plating department in the vicinity of the facility's chromic acid tank (Mailing No. 2, Appendix 16, p. 000660) as noted in an April 19, 1984 spill report to OCDDS. The spill that was referenced in this report is discussed in Section 4.1. The spill report indicated that the floor drain system was connected to the Tracy Street sewer. On the first floor (or basement level) of the Wilkinson Street plant, there is a manhole which was used to discharge boiler drainage "periodically" from the facility's three boilers to the sanitary sewer (Mailing No. 1, Appendix 8, Phase I, p. 6). Floor drains were also observed to be located under the fifth floor nickel bath and were "reportedly" under the die cast machines as well (Mailing No. 2, Appendix 16, pp. 000521, 000700).

The drainage system in the Wilkinson Street facility was not found to be in adequate condition during an April 1990 Phase I site inspection. A floor drain in the first floor compressor room was observed to be "covered in oil" and there was Speedi-Dry absorbent laying on the ground (Mailing No. 1, Appendix 8, Phase I, p. 7). A floor drain was located in the first floor caged storage area which was used to store drums of TCE product and polyester enamel reducer. There were PID readings obtained from many of the facility's manholes and floor drains which would indicate high concentrations of volatile compounds, and the results are presented in Section 4.2.1.

Internal inspection logs were provided for three sewer lengths (total 314 linear feet) which were dated April 7, 1980 (Mailing No. 2, Appendix 16, pp. 000715-000717). The location of these sewers were not indicated on the logs, and there were no recognizable reference

points with which an approximate location could be determined. Numerous structural deficiencies were indicated including cracked pipes and crowns. It was not noted what steps toward sewer rehabilitation, if any, were taken by R.E. Dietz.

The Wilkinson Street facility was issued Notices of Violation (NOVs) by OCDDS, and they were provided in R.E. Dietz's Appendix 16 of their second mailing. NOVs were issued for violations of maximum contaminant concentrations for the following analytes: nickel and zinc concentrations in August 1989 (pp. 000539-000542); copper, nickel, and zinc concentrations between January and April 1990 (pp. 000515-000517); nickel and zinc concentrations on November 29, 1990 (pp. 000433-000435); and zinc on May 27 and 28, 1992 (pp. 000894-000896). Elevated contaminant concentrations in discharged wastewater are discussed in detail in Section 4.2.1.

During an OCDDS inspection of the Wilkinson Street facility, it was noted that elevated nickel concentrations in discharged wastewater were due to "faulty circulating pumps," which had been temporarily undergoing repairs, and were eventually due to be replaced (Mailing No. 2, Appendix 16, pp. 000519-000521). The exact date of the inspection was not noted, however, the inspection report was written on January 31, 1990, and the visit was partially a result of elevated contaminant levels in samples collected from December 13 through 18, 1989. Elevated zinc concentrations in wastewater discharges were also attributed to a "failed caustic cleaner circulating pump" (Mailing No. 2, Appendix 16, p. 000523). It was approximated, based on "initial results" from in-house laboratory testing, that "zinc will precipitate out at a pH of 8.5 to 9, [and nickel] at 9.5" (Mailing No. 2, Appendix 16, p. 000597).

A complaint was filed with OCDDS regarding "zinc contaminated wastewater" which was supposedly being discharged by R.E. Dietz into the OCDDS sewer system (Mailing No. 2, Appendix 16, p. 000807). A followup inspection of the first floor former diecasting area (southeast corner of the building) was conducted on December 11, 1991, and wastewater

samples were collected. It was observed during the inspection that the vibratory machine was overflowing into a sewer drain. Wastewater data from this sample event were not available for review.

In the R.E. Dietz Wolf Street facility, there was a floor drain in the basement level compressor area. During the April 1990 Phase I site inspection, it was noted that "spills to the floor were observed within close proximity" to the floor drain, near an area used to store 55-gallon drums of motor oil and hydraulic oils (Mailing No. 1, Appendix 8, Phase I, p. 14). There is a boiler room sump on the basement level which was noted to be "stained with unknown boiler treatment chemicals, which were purple and greenish brown in color." Adjacent to the boiler room, the former coal storage room was found to be "extensively stained and discolored by an unknown material spill. The stained area occupies most of the room, is blue/white/black in color and over one inch deep in some locations." It is possible that over the course of this facility's operation, this spilled material overflowed into the boiler room floor and sump. However, since the property had already been sold at the time this mailing was submitted (September 30, 1998), R.E. Dietz was unable to provide detailed information on the drainage system.

In the third mailing, R.E. Dietz indicated that, regarding the floor drains and facility sumps, "unfortunately [R.E.] Dietz cannot provide complete information on these. The building has been sold, renovated and sectioned off to suit tenant needs" (Mailing No. 3, p. 2). Furthermore, it was noted that they could not specify "where the floor drain that served [the] cooling tower and a floor drain in the compressor room discharged."

4.0 LIKELIHOOD OF RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

4.1 Documented Releases

Wilkinson Street Facility

It was noted in R.E. Dietz's first mailing that "no reported spill incidents were identified for the Wilkinson Street facility" (Mailing No. 1, p. 000003), and this was also indicated in the May 1990 Stearns & Wheler Phase I environmental assessment (Mailing No. 1, Appendix 8, Phase I, p. 16). The only toxic chemicals released to the environment from the Wilkinson Street facility, as described on a NYSDEC SARA Title III Toxic 1989 Chemical Release Inventory Data form, were TCE and xylene air emissions, as noted in Section 3.4. There were, however, several contaminant releases to the OCDDS sewer system described in the Phase I environmental assessment and in the other documents provided by R.E. Dietz which are discussed in this section.

On July 26, 1990, an R.E. Dietz wastewater pre-treatment facility operator continued to discharge wastewater to the OCDDS sewer system even though the system "ran out of NaOH (for metal precipitation) at 09:30 am" (Mailing No. 2, Appendix 16, p. 000506). It was indicated in the Discharge (Spill) Report that analytical results for samples collected would be submitted to OCDDS as soon as they were available. These results were not included in the documents reviewed.

On November 11, 1980, employee error resulted in the release of 25 to 30 gallons of nickel solution, some of which overflowed the existing floor drainage sump and into the OCDDS sewer system (Mailing No. 2, Appendix 16, p. 000700). No wastewater sample data were available for review, and R.E. Dietz noted they would purchase "heavy metals analysis kits" to promptly identify spills in the future. A damaged hose was the result of a 400-gallon spill

of zinc chloride into the OCDDS sewer system on July 15, 1981 (Mailing No. 2, Appendix 16, p. 000696). Unspecified "clean up procedures" were implemented, and there were again no wastewater data provided. It was noted in a February 1, 1983 letter to OCDDS from R.E. Dietz that "approximately five gallons of di-chromate solution was dragged into the rinse tank causing an out of standard reading [for zinc] of 23.4 mg/L" (Mailing No. 2, Appendix 16, p. 000667). This release was due to employee error, and measures were taken to prevent the same problem from reoccurring (i.e., new counter flow rinses, new tank-to-tank drain boards, and installation of a sampling tank and conductivity alarm system). On April 11, 1984, there was a 10 to 15 gallon spill of 40% concentration chromic acid to the Tracy Street sewer which is south of the facility (Mailing No. 2, Appendix 16, p. 000660). This accidental release occurred "due to personnel error" while repairs were being conducted on the plating department's water supply system. The chromic acid "overflowed the [chromic acid] tank, into the floor drain system."

The following observations were made by Stearns & Wheler during an April 1990 Phase I inspection of the Wilkinson Street facility. There were traces of oil spills and Speedi-Dry absorbent observed on the first floor compressor room floor. A leaking joint had also apparently resulted in an oil spill in the compressor room because oil residue was observed on the adjacent wall. There was a floor drain in the room which was reported to be "covered in oil" (Mailing No. 1, Appendix 8, Phase I, pp. 6-7). The northern first floor flammable materials storage vault (there is also one just north of the compressor area) had a liquid with an oily sheen covering an unspecified portion of the floor. On the second floor, it was observed that there was some staining of the floor by lubricating oils in the heavy press area and there were drip pans in use to collect the falling lubricating oils. As noted in Section 3.5, it was not noted if there were floor drains in the heavy press areas. Extensive leakage was also observed on the floor and on floor-mounted drains from one of the fifth floor plating tanks. The location of the spillage can be seen in the fourth floor site map (Figure 8 herein) where an area is labeled "green seep on ceiling," which is directly below the plating tank area. Spills were also observed in the fifth floor's plating supply storage room. It was noted

during the inspection that many of the storage containers, which contained nickel additive, potassium chloride, boric acid, chromic acid, "RB Degreaser," potassium copper cyanide, and "Du-Chrome" were "open and deteriorated, causing spillage of the products to the floor" (Mailing No. 1, Appendix 8, Phase I, p. 11).

As of May 1990, which was the date of the Stearns & Wheler's Phase I environmental assessment, there was still one transformer on the Wilkinson Street facility's fourth floor which contained PCBs. This "old main transformer" was no longer in service (Mailing No. 1, Appendix 8, Phase I, p. 11). It was noted that a second can-type transformer might have contained PCBs, however, this was not certain. No spills from these transformers were documented, however, their presence should be noted because of their potential for generating PCB wastes. Stearns & Wheler also noted that the facility's fluorescent lighting fixtures possibly contained PCB-contaminated ballasts.

A discussion regarding permitted wastewater discharges from the Wilkinson Street facility into the OCDDS sewer system is provided in Section 3.5. There also were, however, spills and leaks into the OCDDS sewer system. It was noted in a January 16, 1990 letter to OCDDS that a failed caustic cleaner circulating pump leaked cleaners into the wastewater treatment system at the Wilkinson Street facility (Mailing No. 2, Appendix 16, p. 000523). Wastewater sample analyses from the leaking material were provided, and the analyte concentrations which exceeded OCDDS permit limits were nickel and zinc (Mailing No. 1, Appendix 8, pp. 000198-000208, 000525-000527). The OCDDS permit exceedances for this event and the other wastewater sample results for which there were OCDDS permit exceedances are shown in Table 3 herein. Table 3 contains the elevated wastewater analyte concentrations as well as the OCDDS daily maximum discharge limitations from the last two permits which were valid between April 22, 1991 to April 22, 1993 (Mailing No. 2, Appendix 16, pp. 000381-000390) and November 1, 1987 to November 1, 1990 (Mailing No. 1, Appendix 8, pp. 000198-000208). Of the OCDDS permits which were provided, the daily maximum discharge limitations for these two most recent time periods (which are

shown in Table 3) did not change. The August 1, 1982 to August 1, 1985 OCDDS permit set higher maximum discharge limitations for all analytes except copper which was slightly lower (3.0 mg/L) (Mailing No. 1, Appendix 8, pp. 000676-000681). The earliest OCDDS permit, which was valid between August 1, 1977 to August 1, 1982, did not set any "special effluent limitations" for the Wilkinson Street facility (Mailing No. 2, Appendix 16, pp. 000741-000748).

Many of the permit limit exceedances were identified in letters between R.E. Dietz and OCDDS, in Notices of Violation, and in semi-annual compliance reports (Mailing No. 2, Appendix 16). As indicated in Table 3, the permit violations were detected between July 10, 1973 and August 7, 1992, and the discharge violations were for chromium, copper, total cyanide, lead, nickel, zinc, and pH. The total toxic organics (TTO) discharge limit of 2.13 mg/L was not exceeded in the wastewater sample results provided. Chloroform, TCE, and xylenes were the only VOCs detected in the three samples collected, but they were detected at low concentrations, below the (TTO) permit limit of 2.13 mg/L or 2,130 parts per billion (ppb or µg/L). The organic compounds which were detected, as well as their maximum concentrations, were as follows: bromodichloromethane at 14 µg/L; chloroform at 130 µg/L; methylene chloride at 4 µg/L; ethylbenzene at 1.1 µg/L; toluene at 5.2 µg/L; trichloroethane (TCA) at 20.3 µg/L; TCE at 96 µg/L; and xylene at 3.8 µg/L. The only NOVs which were available for review were provided by R.E. Dietz in Appendix 16 of Mailing No. 2. NOVs were issued for violations of maximum contaminant concentrations for the following analytes: nickel and zinc concentrations in August 1989 (pp. 000539-000542); copper, nickel, and zinc concentrations between January and April 1990 (pp. 000515-000517); nickel and zinc concentrations on November 29, 1990 (pp. 000433-000435); and zinc on May 27 and 28, 1992 (pp. 000894-000896).

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	7/10/73	7/12/73	4/26/74	7/12/74	10/3/74	7/26/79	8/16/79
Cadmium	0.69							
Chromium	2.77		39.0	24.0		5.9 [2]	6.32 [2]	
Copper	3.38							
Cyanide, Total	1.2			5.1		2.5		
Lead	0.69	2.5						
Nickel	3.98		22.0	5.8 [2]	23.0			
Silver	0.43							
Zinc	2.61		2.99 [2]		7.5		3.0 [2]	5.0 [2]
Total Toxic Organics	2.13							
pH	5.5 - 9.5							

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	8/29/79	9/25/79	10/16/79	11/15/79	1/3/80	1/16/80	5/12/80
Cadmium	0.69							
Chromium	2.77	14.83		6.06 [2]	9.2 [2]	11.0	7.0 [2]	
Copper	3.38							
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98		12.7					10.9
Silver	0.43							
Zinc	2.61	24.0	3.31 [2]	3.2 [2]	4.4 [2]	6.4		
Total Toxic Organics	2.13							
pH	5.5 - 9.5							

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility (Continued)

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	5/22/80	8/24/82	8/25/82	8/26/82	11/15/82	11/16/82	11/17/82
Cadmium	0.69							
Chromium	2.77		3.4	3.85				
Copper	3.38				4.11			
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98	9.1 [2]			103.25			
Silver	0.43							
Zinc	2.61	14.0	5.9			3.17 [2]	3.23 [2]	
Total Toxic Organics	2.13							
pH	5.5 - 9.5	4.0						10.5

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	11/18/82	2/24/86	2/25/86	2/26/86	8/13/86	10/16/86	11/26/86
Cadmium	0.69							
Chromium	2.77	5.15			3.57		28.0	3.8
Copper	3.38			5.09	4.29		7.5	
Cyanide, Total	1.2		2.53	115.0	1.97			
Lead	0.69							
Nickel	3.98		19.0	16.4	23.6		53.0	
Silver	0.43							
Zinc	2.61	23.4	6.94	2.73	7.4	4.8	40.0	
Total Toxic Organics	2.13							
pH	5.5 - 9.5					11.9	2.3	

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility (Continued)

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	12/18/86	1/15/87	2/18/87	3/18/87	4/15/87	11/4/87	11/5/87
Cadmium	0.69							
Chromium	2.77	5.5	11.0	7.6	6.0			
Copper	3.38	5.0						
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98	6.5	24.0	10.0	10.0		4.6	
Silver	0.43							
Zinc	2.61	8.2	32.0	8.8	8.4		4.5	2.7
Total Toxic Organics	2.13							
pH	5.5 - 9.5	10				9.6		

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	1/26/88	1/27/88	2/23/88	2/24/88	2/25/88	2/26/88	11/16/88
Cadmium	0.69							
Chromium	2.77	3.25	3.25				41.4	
Copper	3.38						8.26	
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98	8.23	5.81	19.6		8.4	117.0	
Silver	0.43							
Zinc	2.61	15.3	13.1	11.6	7.35	7.36	121.0	3.1
Total Toxic Organics	2.13							
pH	5.5 - 9.5							

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility (Continued)

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	12/13/88	8/3/89	8/4/89	8/23/89	8/24/89	10/25/89	10/26/89
Cadmium	0.69							
Chromium	2.77							
Copper	3.38							
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98		5.67	7.2	11.7		17	7.1
Silver	0.43							
Zinc	2.61		4.19		4.36	10.4	6.6	5.6
Total Toxic Organics	2.13							
pH	5.5 - 9.5	10.7						

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	10/27/89	1/3/90	2/22/90	2/23/90	4/5/90	4/6/90	6/12/90
Cadmium	0.69							
Chromium	2.77							
Copper	3.38		11.3					
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98	20		9.49	21.8	27.7	19.5	9.43
Silver	0.43							
Zinc	2.61					12.8	5.71	2.81
Total Toxic Organics	2.13							
pH	5.5 - 9.5							

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility (Continued)

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	5/8/90	5/9/90	5/10/90	9/24/90	9/25/90	9/26/90	10/3/90
Cadmium	0.69							
Chromium	2.77							
Copper	3.38							
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98	14	15	5.2	4.4	7.4		
Silver	0.43							
Zinc	2.61	11	37	34	6.1	45.0	8.4	2.8
Total Toxic Organics	2.13							
pH	5.5 - 9.5							

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	10/31/90	11/2/90	11/6/90	11/7/90	11/29/90	11/13/90	12/19/90
Cadmium	0.69							
Chromium	2.77		4.9					
Copper	3.38							
Cyanide, Total	1.2							
Lead	0.69							
Nickel	3.98					7.65	4.4	
Silver	0.43							
Zinc	2.61	4.0		3.0	2.8	2.67	9.0	
Total Toxic Organics	2.13							
pH	5.5 - 9.5							9.6

Table 3: Exceedances of OCDDS Discharge Limitations at the Wilkinson Street Facility (Continued)

Parameter (mg/L)	OCDDS Daily Discharge Limit [1]	12/20/90	1/21/91	1/22/91	2/6/91	7/23/91	5/27/92	5/28/92	8/7/92
Cadmium	0.69								
Chromium	2.77			2.8					
Copper	3.38								
Cyanide, Total	1.2								
Lead	0.69								
Nickel	3.98		8.4	12	10				
Silver	0.43								
Zinc	2.61		7.2	20		2.9	16	16	12
Total Toxic Organics	2.13								
pH	5.5 - 9.5	9.9							

Sources: OCDDS Discharge Permits: Mailing No. 1, pp. 000198-000208; Mailing No. 2, Appendix 16, pp. 000381-000390 and 000676-000681.
Laboratory Testing Results: Mailing No. 2, Appendix 16.

Notes: 1 = OCDDS daily maximum discharge limitations indicated in this table are those listed in the two most recent permits which were reviewed (11/1/87-11/1/90 and 4/22/91-4/22/93).
2 = The Onondaga County Treatment Standard for chromium between August 1, 1982 and August 1, 1985 was 10.0 mg/L, nickel was 10.0 mg/L, and zinc was 5.0 mg/L.

The maximum detected contaminant concentrations, as noted in Table 3 herein, were as follows: 41.4 mg/L chromium; 8.26 mg/L copper; 115 mg/L total cyanide; 117 mg/L nickel; and 121 mg/L zinc. Four of these maximum concentrations were detected during a single sampling event on February 26, 1988 (chromium, copper, nickel, and zinc), however, no explanation for this was provided in the documents that were reviewed. As indicated in Table 3, there were 24 chromium exceedances, 42 nickel exceedances, and 58 zinc exceedances. The wastewater's pH ranged between 2.3 and 11.9. R.E. Dietz generally attributed elevated levels of contaminants discharged to the OCDDS sewer system to regular process operations, system upgrades being incorporated into the existing system, process malfunctions, and incorrect sampling procedures. On January 16, 1990, R.E. Dietz responded to a NOV and November 19, 1989 site visit by indicating that persistent substandard employee performance was resulting in the failure to report operating spills, thereby violating water standards (Mailing No. 2, Appendix 16, p. 000532). The NOV and the OCDDS letter, to which this R.E. Dietz letter was pertaining, were not available for review.

A complaint was filed with OCDDS regarding "zinc contaminated wastewater" which was suspected to have been discharged by R.E. Dietz at the Wilkinson Street facility into the OCDDS sewer system (Mailing No. 2, Appendix 16, p. 000807). A follow-up inspection of the first floor former diecasting area (southeast corner of the building) was conducted on December 11, 1991. It was observed that the vibratory machine was overflowing into a sewer drain. Samples of the material discharging into the drain were collected, however, the results of the sampling were not available for review.

A draft copy of an October 1, 1990 letter from R.E. Dietz to OCDDS indicated that R.E. Dietz created a "Waste Water Compliance Committee" to ensure regulatory compliance and improve the system of wastewater management (Mailing No. 2, Appendix 16, pp. 000484-000488).

It was noted that, based on an August 3, 1998 site inspection, there was still one PCB transformer in use with no evidence of leaking (Mailing No. 3, p. 2). During this inspection, it was observed that there was a sign indicating the presence of PCBs, and that the transformer was located in a "formed concrete area designed to collect any leakage" and that "there is no drain from this concrete form."

Wolf Street Facility

R.E. Dietz indicated that there was only one spill incident at the Wolf Street facility, which was a 40-gallon diesel fuel spill resulting from equipment failure on July 26, 1989 (Mailing No. 1, pp. 2-3). The Syracuse Fire Department and Environmental Oil, Inc. responded to remediate the spill. The location of the fuel spill was not indicated in the documents that were available for review, however, it was noted that four drums of contaminated soil and Speedi-Dry absorbent were removed for disposal (Mailing No. 1, Appendix 8, Phase I, p. 16). As noted in Section 3.1, it was not apparent how the fuel came into contact with underlying soil if there was a concrete pad in place. It is possible that the pad was installed after July 26, 1989, however, this was not indicated in the documents reviewed.

During the April 1990 inspection of the R.E. Dietz facilities, Stearns & Wheler identified several spills on the two floors of the Wolf Street facility and along the building's exterior (see Figures 10-12). On the main floor of the Wolf Street facility, lubricating oil leaks were observed from the injection molding machines on the floor. The leaks were described as "minor" and were contained with the application of Speedi-Dry absorbent (Mailing No. 1, Appendix 8, Phase I, p. 13). On page 13 of the Phase I environmental assessment, it was noted that an unknown material was "observed on the floor around the [operational wave soldering] machine" on the main floor. Also, spillage of Conthange epoxy resin was observed in the main floor manufacturing and assembly area.

On the basement level, oil spills were observed in the compressor area in close proximity to a floor drain (Mailing No. 1, Appendix 8, Phase I, p. 14). The floor and sump of the boiler room were stained with unknown purple and brownish-green boiler treatment chemicals, and the floor and sump of the coal storage room were extensively stained and discolored by an unknown blue, white, and black chemical spill. The spilled material in the coal storage area is "over one inch deep in some locations." There was also staining on the walls of the coal storage area which, it was concluded by Stearns & Wheler, "indicates that some infiltration of unknown content may have entered the room from outside the building." In the water cooling treatment area, there was spillage of a corrosion-preventative material known as "Isogard" on the floor and in contact with a floor drain.

Outside of the Wolf Street facility, it was noted that used Speedi-Dry absorbent was found on the concrete pad around the pallet adjacent to the storage shed. Furthermore, it was indicated that there was an area of ponded water which had a thick, oily sheen, around the exterior area's drum storage area and dumpsters.

No spills were noted to have occurred during New Venture Gear's ownership of this facility (TAMS, 2000).

Ongoing/Recent Releases

R.E. Dietz ceased operations at both facilities in 1992 (Mailing No. 1, cover letter; Mailing No. 2, Appendix 16, p. 000890). Therefore, based on the documents reviewed, no ongoing or recent releases of contaminants by R.E. Dietz are expected at either facility.

4.2 Threat of Release to the Lake System

4.2.1 Extent of Site Contamination

Based on the material submitted, on-site contamination potentially exists in the following areas: within the Wilkinson Street or Wolf Street facilities on floors that were made of concrete; outside of the Wolf Street facility on a paved area that was enclosed with a concrete wall; and within and near floor drains and sewers that discharged contaminated wastewater into the OCDDS system. It is recommended that limited sampling, including soil borings, be performed to determine the extent of contamination in the vicinity of discharge areas to the OCDDS sewer system.

Soil

Soil sampling data were not provided for either facility, and soil samples should be collected and analyzed before a complete environmental assessment can be made. It was not indicated whether the entire courtyard area of the Wilkinson Street facility or the exterior area of the Wolf Street facility are paved and, if so, for how long. Although no indication was provided in the documents reviewed that these areas were ever grassed, or otherwise un-paved, such a condition would provide a potential pathway of soil contamination.

Sewer inspection logs dated April 7, 1980 were provided for 314 linear feet of sewer, which indicated that there were many structural deficiencies, including cracked pipes and crowns (Mailing No. 2, Appendix 16, pp. 000715-000717). Since there have been frequent discharges of contaminated wastewater to the facilities' floor drains and sewers, it is possible that sewers which were not structurally sound may have caused contaminants to seep into the soil and into the groundwater.

During the April 1990 Stearns & Wheler Phase I site investigation, VOC concentrations were measured at select locations in the Wilkinson Street facility which were suspected to contain volatile waste. Although four floors were investigated, it is probable that only the first and second floors' sample locations are of concern regarding site soil contamination. This is because in the event of a spill and potential structural deficiencies (i.e., cracks) in the concrete floor, soil could be contaminated from interior spills. A Photovac Microtip photoionization detector (PID) was used to measure VOCs, and the measured concentrations are listed in Table 4 herein. Soil beneath a TCE drum storage area on the second floor was tested, and the elevated PID reading led Stearns & Wheler to conclude that "contamination of the soil and groundwater at this site may have occurred. Sampling and analysis of the soil and groundwater in the affected area is recommended in order to characterize the nature and extent of the possible contamination and remedial measures, if necessary" (Mailing No. 2, Appendix 8, Phase I, p. 8). Elevated PID readings were also detected in a drum stored at the courtyard area. Based on these data and the waste storage information that was provided (see Table 2), the foundation below the storage dock was not impervious and there were several drums containing TCE and possibly hazardous, unidentified materials stored in this area of the site. It is not known if the soil and groundwater sampling that was recommended by Stearns & Wheler was conducted.

PID readings were also obtained at the Wolf Street facility in the vicinity of six upside-down storage drums. Drum and soil PID readings at this location were found to not exceed background levels.

Table 4: PID Readings at the R.E. Dietz Wilkinson Street Facility

Wilkinson Street Plant Floor No.[1]	Sample Location	PID Reading and Observations
First Floor		
	Manhole for the Main Boilers	± 500 ppm
	Boiler Room Floor Drains	± 10 ppm
	Two Flammable Material Storage Vaults	± 10 ppm at both locations. The northern vault exhibited a solvent odor, and the southern vault had no visible ventilation.
	Caged Storage Area	± 24 ppm
	Background Value[2]	Not detected
Second Floor		
	Soil Below the Wooden Drum Dock	± 200 ppm
	Courtyard Dock	± 100 ppm from the mouth of a storage drum
	Two Courtyard Manholes	± 10 ppm at both locations
	Unidentifiable Vent Pipe	Not detected
Fourth Floor		
	Painted Parts Drying System	± 15 - 20 ppm with a noticeable solvent odor
	Two Electrostatic Paint Spray Booths	± 50 - 70 ppm in the background air and breathing zone
Fifth Floor		
	Plating Area	± 70 ppm
	TCE Degreaser Area	± 90 ppm
	TCE Degreaser Floor Pit	± 50 ppm (± 100 ppm in the breathing zone of the degreaser attendant).
	Paint Spray Booths	± 600 ppm with a strong solvent odor

Source: R.E. Dietz, 1996, Mailing No. 1, Appendix 8, Phase I, pp. 6-12.

Notes: PID readings were collected with a Photovac Microtip photoionization detector (PID) during a Phase I site investigation that was conducted by Stearns & Wheler in April 1990.
1 = No PID data from the third floor were provided.
2 = The exact sampling location of the background level was not noted.

Groundwater

Groundwater sampling data were not provided for the Wilkinson Street or Wolf Street facilities. Furthermore, based on the documents reviewed, the only evidence which was provided which would indicate groundwater has been contaminated for either facility was the elevated PID readings obtained from soil in the Wilkinson Street facility second floor courtyard area. Soil borings which were recommended earlier in this section could potentially indicate whether groundwater contamination exists in this area. Similarly, structural defects in the sewer system could pose a risk to groundwater as well as underlying soil. This is of particular concern because of the 19 years (July 10, 1973 to August 7, 1992) of elevated pollutant concentrations (which were noted in Table 3) in the wastewater discharged to the OCDDS sewer system.

Sediment

In 1996 and 1997, NYSDEC collected sediment samples from Onondaga Creek which is approximately 2,000 feet east of the Wilkinson Street facility. However, due to the large distances between the samples and the site and the existence of other industrial sites closer to the creek, these sediment data are not discussed in this report.

NYSDEC also collected sediment samples in 1996 and 1997 from Ley Creek which is approximately 2,000 feet west of the Wolf Street facility. The nearest sample locations were in the vicinity of where Ley Creek intersects with 7th North Street. Data from these locations were not evaluated for this report since one location was in Beartrap Creek upstream of 7th North Street and the Ley Creek stations were all adjacent to the Crouse Hinds Landfill (Company ID 2015, Site ID 246).

Air

PID readings were obtained in the vicinity of drums and possibly contaminated soil at both the Wilkinson Street and Wolf Street facilities. The Wilkinson Street facility PID readings are presented in Table 4 herein, and the Wolf Street facility PID readings were found to not exceed background levels.

Asbestos-containing materials were "observed throughout" both of the R.E. Dietz facilities by Stearns & Wheler in the form of air cell and preform pipe insulation, boiler jacket insulation, hot water tank insulation, floor tiles, ceiling tiles, and roofing materials (Mailing No. 1, Appendix 8, Phase I, p. 19). In R.E. Dietz's second mailing, information regarding the testing and disposal of asbestos materials found at the Wolf Street facility was provided (Mailing No. 2, Appendix 15).

Sewer Discharges

According to R.E. Dietz, the Wilkinson Street facility's pre-treated effluent was discharged into the OCDDS sewer system from electroplating and vibratory tumbler operations, di-chromate and phosphate processes, and paint stripping operations, in addition to sanitary wastewater and non-contact cooling water. Based on the information provided regarding wastewater contaminants (see Table 3), there were elevated concentrations of four metals (chromium, copper, nickel, and zinc) and cyanide in the discharged wastewater. The wastewater contained elevated concentrations of these contaminants for a period of at least 19 years (July 10, 1973 to August 7, 1992). Furthermore, prior to the facility's on-site pre-treatment system, which was completed prior to November 26, 1985 (Mailing No. 2, Appendix 16, p. 000642), wastewater was most likely discharged directly into the OCDDS sewer system with higher contaminant concentrations. As noted in Section 2.3, the specific pre-treatment operations included "chrome reduction, CN [cyanide] destruct, pH adjustment, [and] metal sludge" precipitation (Mailing No. 2, Appendix 16, p. 000640).

4.2.2 Migration Potential of Contaminants

Of all the wastes generated by R.E. Dietz, the wastes stored in the Wilkinson Street facility second floor central courtyard area and the wastewater discharged from the Wilkinson Street facility to the OCDDS sewer system have the greatest potential for migration into soil, groundwater and the lake system. Wilkinson Street facility operations located elsewhere throughout the five story building likely generated contaminants which were contained within the building (with the exception of discharged wastewater). Wolf Street facility operations located within the basement and main floor were also likely contained within the building. No indication was provided that the Wolf Street facility's exterior area was pervious. Therefore, since the area was surrounded by a concrete wall, spilled contaminants in this area were likely contained on-site as well.

Surface water runoff into the lake system is most likely not a concern at either R.E. Dietz facility because of roof drain systems which conveyed rainwater from both sites into the OCDDS sewer system, and both sites were relatively enclosed. Furthermore, both sites were located a significant distance from nearby surface water bodies. It was generalized in the Stearns & Wheler report that "surface water runoff from each site flows mainly toward storm drains located along the streets adjacent to each property" (Mailing No. 1, Appendix 8, Phase I, p. 4). As noted in Section 3.2, there were no surface water data included in the documents reviewed which would have provided an indication of whether soil and runoff had been contaminated.

5.0 POTENTIAL FOR ADVERSE IMPACTS TO LAKE SYSTEM DUE TO A RELEASE OR THREAT OF A RELEASE

5.1 Hazardous Substance Characteristics

R.E. Dietz provided numerous reports indicating that the wastewater that was generated at the Wilkinson Street facility contained elevated concentrations of chromium, nickel, and zinc. Although the effluent received pre-treatment prior to its discharge into the OCDDS sewer system after 1985, exceedances of the OCDDS industrial wastewater discharge limits were still identified in 24 samples for chromium, 42 samples for nickel, and 58 samples for zinc between July 10, 1973 and August 7, 1992. Wastewater discharge methods prior to July 10, 1973 were not specifically indicated in the documents reviewed. However, it is likely that these wastes were discharged without treatment into the OCDDS sewer system.

A discussion of hazardous substance characteristics for the contaminants of concern at the Wilkinson Street facility, including chromium, nickel, and zinc, is provided below. The likely pathway of release for these contaminants into the Onondaga Lake system is from elevated concentrations in wastewater discharged to the OCDDS sewer system. TCE is considered to be a potential contaminant of concern but is not discussed in this section because additional environmental investigations would be necessary to determine the quantity and concentration of TCE that has spilled into the courtyard's soil from the spent TCE disposal drums. There was a significant quantity of spent TCE generated by R.E. Dietz on a regular basis over a 25-year period (approximately 11½ drums per year), so the accumulated amount could be of concern (Mailing No. 2, p. 3).

The Wolf Street facility does not have any contaminants of concern based on the data and information that were provided. In particular, it was noted that process wastes were not generated at the facility (Mailing No. 3, p. 2). Facility operations were either conducted

inside the main building or within a concrete walled exterior area, and major spills were not indicated either inside or outside.

Mobility

The fate and mobility of chromium in soil is dependent on the pH, redox potential, and sorption characteristics of the soil. Reduction of hexavalent chromium (Cr(VI)) to trivalent chromium (Cr(III)) is facilitated by low pH (US Department of Health & Human Services, USDHHS, 1991). Chromium in soil is predominantly in the trivalent form and as an insoluble oxide, and is, therefore, not very mobile (USDHHS, 1991). Also, chromium in soil can be transported to the atmosphere as an aerosol or dust or can be transported via surface runoff to receiving waters in soluble or bulk precipitate form. Chromium in soluble and unadsorbed complexes in soil can leach into groundwater, depending upon soil pH (USDHHS, 1991).

Nickel is one of the most mobile heavy metals in the aquatic environment. Mobility of nickel is affected by sorption to organic materials, and hydrous iron and manganese oxides (USEPA, 1979).

Zinc is likely to be strongly sorbed in soil, and the tendency of zinc to be sorbed is affected by pH and salinity (US Public Health Service, USPHS, 1989). Zinc tends to be more readily sorbed at elevated pH, and desorption of zinc from sediments occurs as salinity increases. This is due to displacement of the adsorbed zinc ions by alkali and alkaline earth cations. Zinc in a soluble form, such as zinc sulfate, is fairly mobile in most soils. Atmospheric transport of zinc is possible, however, the atmospheric fate of zinc has not been comprehensively studied.

Toxicity

Hexavalent chromium is classified as a human carcinogen (USEPA, 1996). Epidemiological studies of chromate facilities in the United States have found an association between chromium exposure and lung cancer. Workers are likely exposed to both Cr(III) and Cr(VI), however, only Cr(VI) has been found to be carcinogenic in animals (USEPA, 1996). Chromium(VI) is also very toxic to aquatic organisms (USEPA, 1979). Exposure to high levels of Cr(III), although an essential element, via inhalation, ingestion, or dermal contact may cause serious health effects (USDHHS, 1991).

Nickel can be lethal following prolonged exposure by inhalation or ingestion, targeting respiratory tissue. Soluble forms of nickel are generally more toxic than non-soluble compounds (Syracuse Research Corporation, 1991). Soluble halide, hydroxide, carbonate, and sulfate compounds form complexes with nickel and can persist at toxic levels in the aquatic environment (USEPA, 1979).

There is little information concerning death in humans following inhalation, and/or oral or dermal exposure to zinc (USPHS, 1989). Systemic effects of acute inhalation exposure to unspecified levels of zinc compounds in humans have been reported in several clinical studies. Inhalation exposure has resulted in clinical symptoms suggestive of neurological effects in humans. No information was found by USPHS regarding the effects following dermal exposure. Limited information was found regarding a relationship between the ingestion of zinc and its compounds, and the subsequent development of cancer or death.

Persistence

In surface waters, no data have been found that would indicate that photolysis, biodegradation, and volatilization of chromium are important fate processes (USEPA, 1979). Sorption and bioaccumulation are considered important aquatic fate processes. As discussed

above, chemical speciation plays an important role in the fate of chromium in surface water; conditions favorable to Cr(VI) will maintain chromium in soluble form while conditions favorable to Cr(III) will result in precipitation and partitioning to solids and to sediments (USEPA, 1979). Chromium is not considered as persistent in surface water compared to soil and sediment.

Since nickel and zinc are elements, they cannot be broken down at all, and their concentration in environmental media is governed solely by dilution mechanisms.

Bioaccumulation

Bioaccumulation of chromium in aquatic organisms and passage through the food chain has been demonstrated (USEPA, 1979). However, chromium concentrations decrease with an increase in trophic level. Chromium is not expected to biomagnify in the aquatic food chain (USDHHS, 1991). Partitioning studies indicated that bioconcentration factors of benthic invertebrates to water are approximately 2,000 to 3,000 whereas the bioconcentration factor of benthics to sediments is less than one (USEPA, 1979). In general, chromium is accumulated in aquatic and marine biota to levels much higher than surface water, however, concentrations in biota are usually lower than sediment concentrations. Also, chromium does not biomagnify along the terrestrial food chain from soil to plant to animal (USDHHS, 1991).

Nickel is bioaccumulated by some aquatic organisms, however not in significant amounts compared to other metals (USEPA, 1979).

Zinc is an element essential to diet, and bioaccumulates in all organisms. The basis by which humans maintain adequate physiological levels of zinc is through ingestion.

5.2 Quantity of Substances

R.E. Dietz estimated that approximately 220 drums of TCE waste weighing 660 lb each were generated and disposed off-site over a 19-year period (assumed to refer to the Wilkinson Street facility as noted in Section 2.3). This is the equivalent of approximately 11½ drums per year, or 7,600 lb TCE generated annually and disposed off-site. It was indicated in a January 30, 1991 letter from R.E. Dietz to OCDDS that the average quantity of generated waste treatment sludge was 8,000 to 10,000 lb twice per year. Assuming an 8-year pre-treatment operation (1985 to 1992), this would translate to approximately 144,000 lb over eight years. Based on an employee interview, it was estimated that "one barrel of waste sludge" was produced per month (Mailing No. 2, p. 2). Assuming one barrel has a 55-gallon capacity, this corresponds to approximately 660 gallons produced per year. The Wilkinson Street facility painting operations generated approximately one 55-gallon drum of liquid waste paint solvents every 5 to 6 weeks, and approximately two 55-gallon drums of solid waste (paper sheeting and tape) every 12 to 15 days (Mailing No. 1, Appendix 8, Phase I, p. 10). This translates to approximately 9½ drums of liquid waste paint and 54 drums of solid waste paint per year. It was indicated in a January 25, 1972 plant inspection report that cooling water was discharged from the facility at approximately 173,000 gal per month (Mailing No. 2, Appendix 16, p. 000804).

5.3 Levels of Contaminants

A discussion of the extent of on-site contamination is included in Section 4. Limited analytical data were provided in the three R.E. Dietz mailings. This includes wastewater data from samples collected prior to discharge to the OCDDS sewer system from 1973 to 1992. Concentrations of metals during this period are summarized in Table 1 and were frequently found to exceed OCDDS limits. OCDDS Notices of Violation and letters noting permit violations from OCDDS are discussed in Section 4.1.

5.4 Impacts on Special Status Areas

According to the Syracuse West New York State freshwater wetland map (NYSDOT, 1973; modified by NYSDEC, 1986), there are no New York State freshwater wetlands in the vicinity of the R.E. Dietz Wilkinson Street facility (the closest is along the shore of Onondaga Lake greater than one mile to the northwest). The federal wetlands closest to the Wilkinson Street facility, according to the Syracuse West National Wetlands Inventory (NWI) map (USDOI, 1978), are Onondaga Creek which is located approximately 2,000 feet to the east, and the Barge Canal terminal which is approximately 3,000 feet to the north. The Onondaga Creek wetland designation is R2OWH (Riverine, lower perennial, open water, permanent) and the Barge Canal terminal, which is the receiving water for Onondaga Creek, is designated R2OWHx (Riverine, lower perennial, open water, permanent, excavated). Both Onondaga Creek and the Barge Canal terminal are Class C water bodies with C standards (6 NYCRR Part 895.4). As of 1996, there were no New York State "Natural Heritage Sensitive Elements" in the vicinity (within one mile) of the R.E. Dietz Wilkinson Street facility.

According to the Syracuse West New York State freshwater wetland map (NYSDOT, 1973; modified by NYSDEC, 1986), the wetland closest to the R.E. Dietz Wolf Street site is situated approximately 1,000 feet west of the facility near Ley Creek and is designated SYW 11. The federal wetland closest to the Wolf Street site is Ley Creek which is approximately 2,000 feet to the northwest and is designated R2OWHx (Riverine, lower perennial, open water, permanent, excavated). Ley Creek, in the vicinity of the R.E. Dietz facility, is a Class C water body with C standards (6 NYCRR Part 895.4). As of August 1996, there are two New York State "Natural Heritage Sensitive Elements" approximately one mile northwest of the R.E. Dietz Wolf Street facility, on the shore of Onondaga Lake. These two areas are not at risk of being contaminated by surface water runoff from the Wolf Street site because they are located on the opposite side of Ley Creek.

Based on the information reviewed, surface water discharges were not a concern at the Wilkinson Street and Wolf Street facilities, and there is insufficient data to indicate that groundwater contamination is not a concern at either site. Both sites were likely entirely paved and/or indoors. Since there were no soil, groundwater, or surface water data pertaining to the sites or the surrounding areas, further investigation is required at the two R.E. Dietz facilities to assess the extent of contamination, as was recommended in the Phase I report.

6.0 SUMMARY OF CONCERNS

Based on the data and information provided by R.E. Dietz, the following concerns are identified:

- There were numerous discharges of wastewater to the OCDDS system at contaminant levels which exceeded OCDDS industrial wastewater discharge permit limitations. Based on the sample results provided, these exceedances spanned from at least 1973 to 1992. It should also be noted that pre-treatment commenced in 1985 and, thus, untreated wastes were likely discharged prior to that time and prior to 1973. Three metals (chromium, nickel, and zinc) were commonly found at elevated levels and were selected as the contaminants of concern at the Wilkinson Street facility.

  In addition to pre-treated wastewater, the OCDDS sewer system also received flow from floor drains in the Wilkinson Street and Wolf Street facilities. During a Stearns & Wheler site investigation in April 1990, staining was observed in contact with floor drains and sumps at multiple locations within each facility.

- Data are not available to assess the extent of on-site contamination and off-site migration at the Wilkinson Street facility from the on-site spent TCE drum storage area. Stearns & Wheler detected elevated readings with a photoionization detector and subsequently recommended a soil and groundwater investigation (it is not known if this sampling has been performed). This is of particular concern at the Wilkinson Street facility's courtyard area because it was used as a storage area for unmarked and unidentified hazardous waste drums.

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R.E. Dietz. September 30, 1998. Mailing No. 3: Supplemental Response to Request for Information.

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Site Locations: R. E. Dietz Company

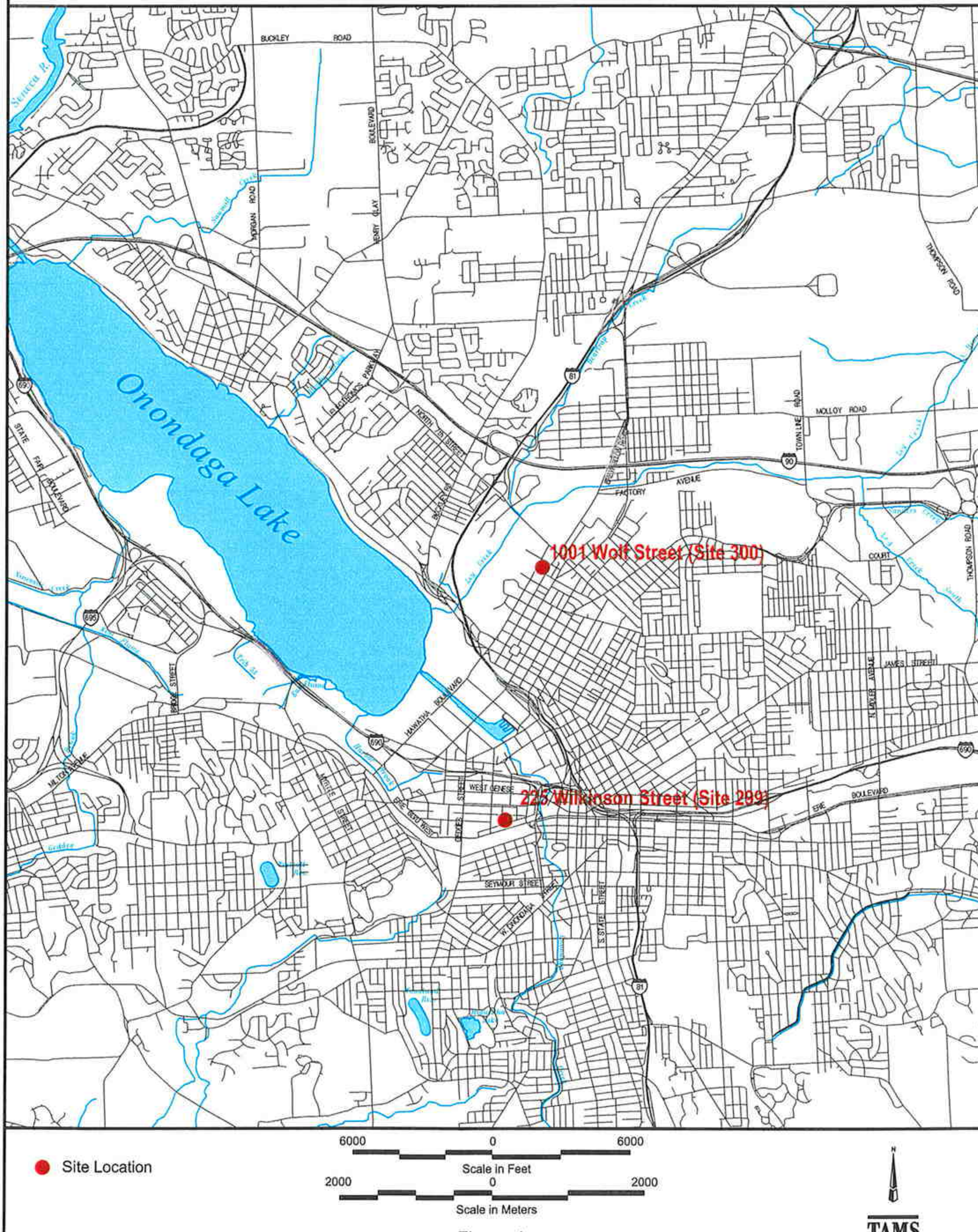
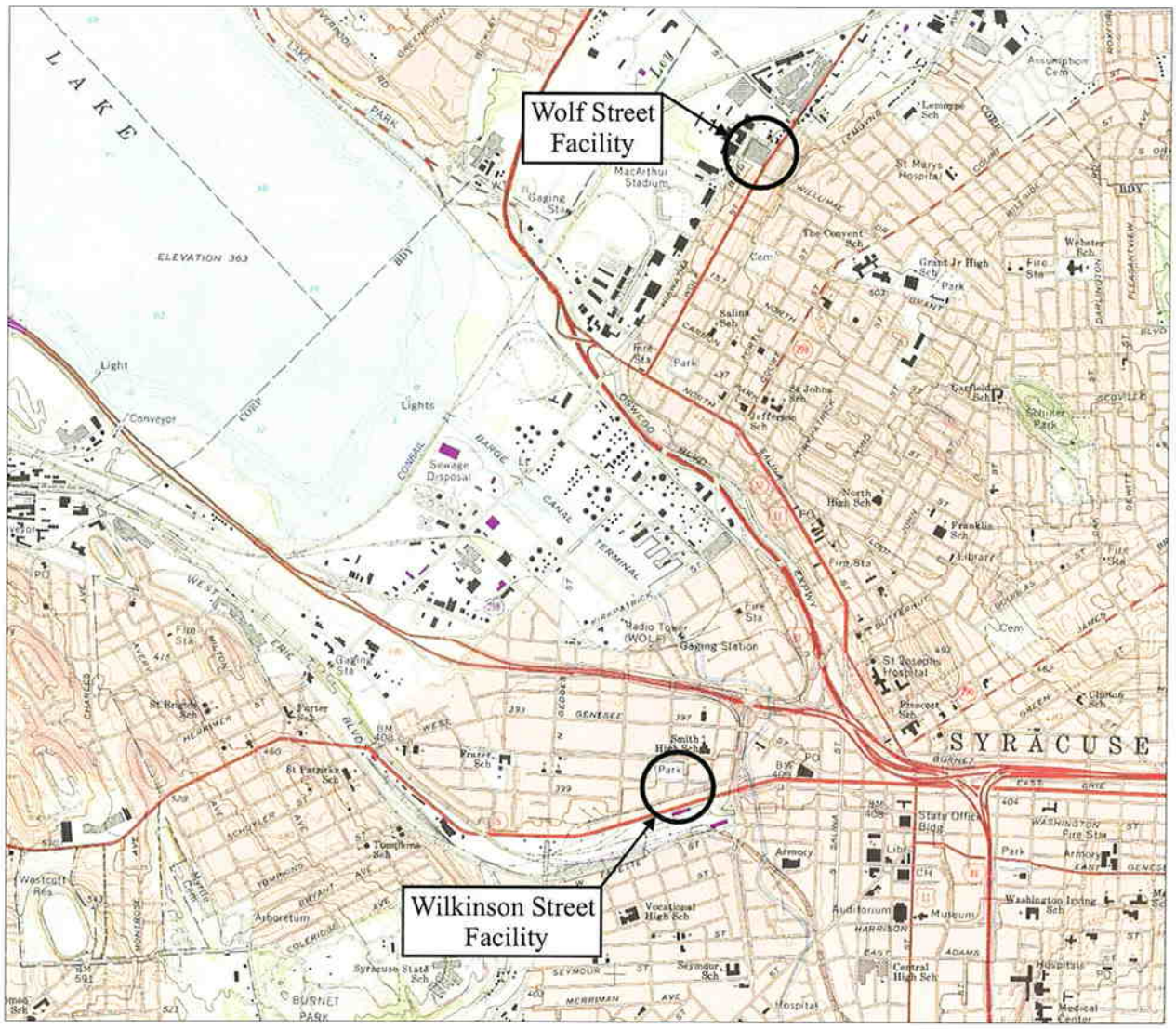


Figure 1



SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE

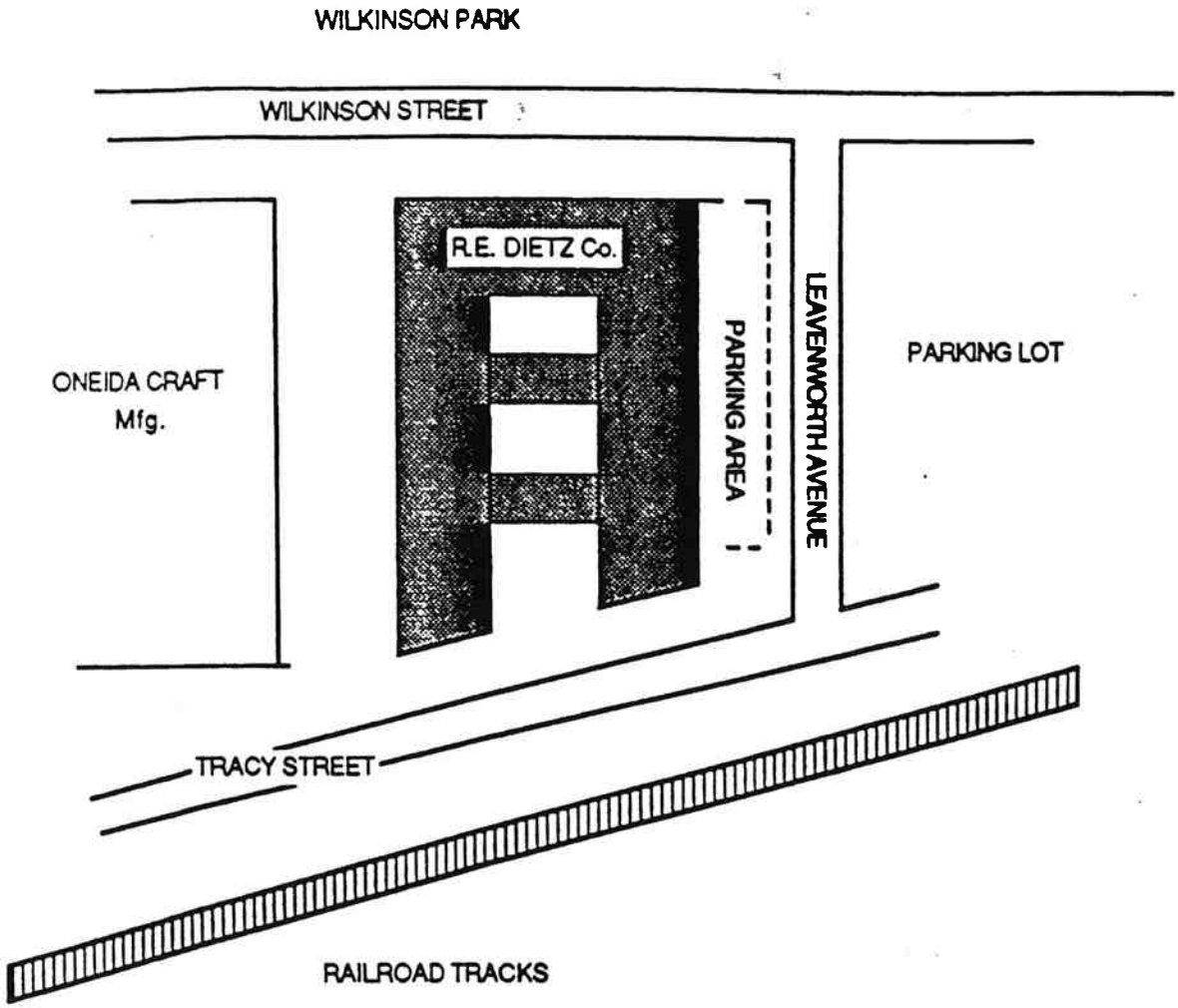
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS 363 FEET IN ONONDAGA LAKE

N

United States Geological Survey
Syracuse West Quadrangle
Onondaga County, New York

TAMS

Figure 2
R. E. Dietz Facilities



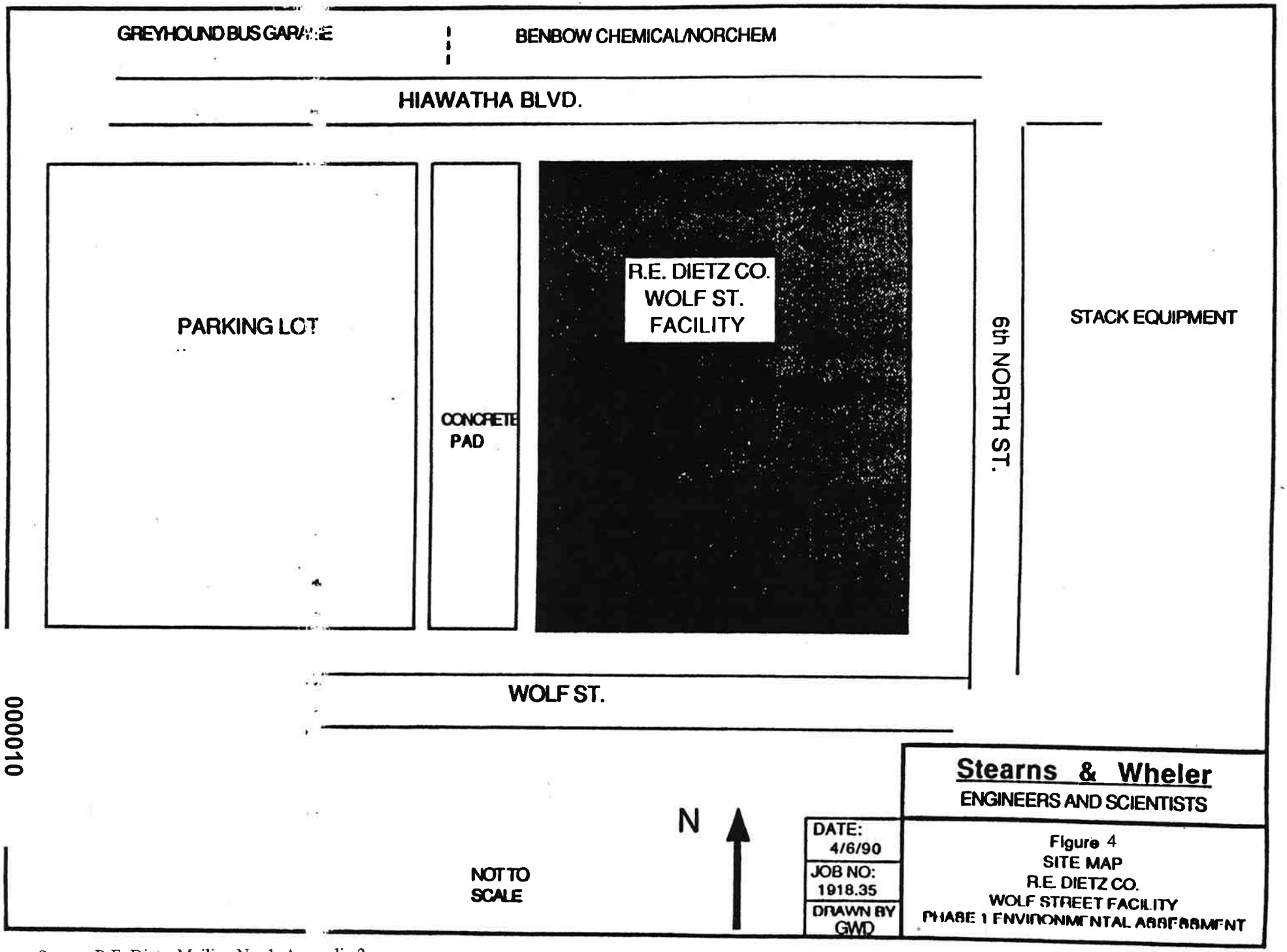
Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/9/90	Figure 3 - Site Map
JOB NO: 1918.35	R.E. DIETZ CO.
GWD	WILKINSON ST. FACILITY
	PHASE 1 ENVIRONMENTAL ASSESSMENT

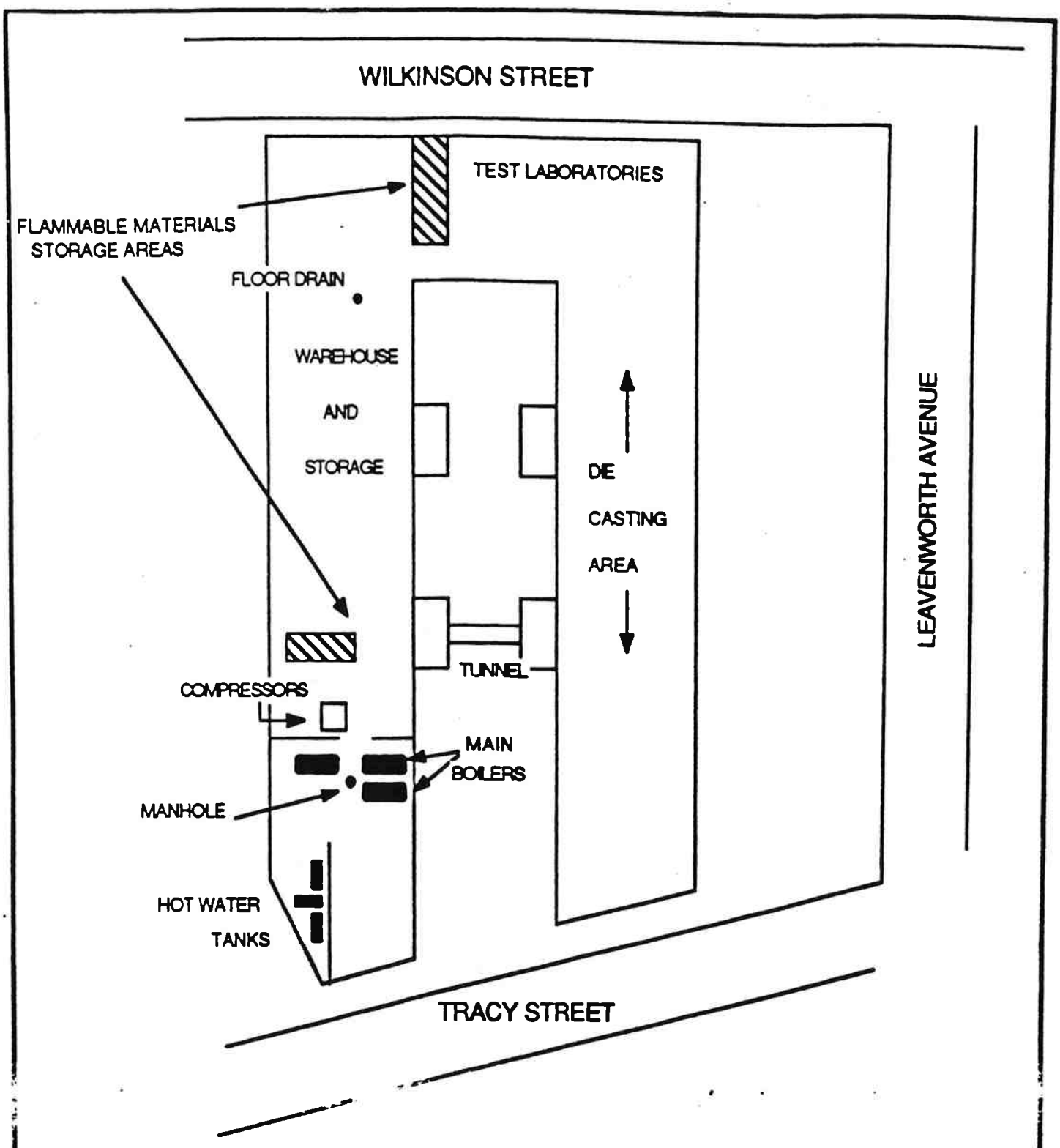
N

NOT TO SCALE

Source: R.E. Dietz, Mailing No. 1, Appendix 2



Source: R.E. Dietz, Mailing No. 1, Appendix 2



FIRST FLOOR
NOT TO SCALE

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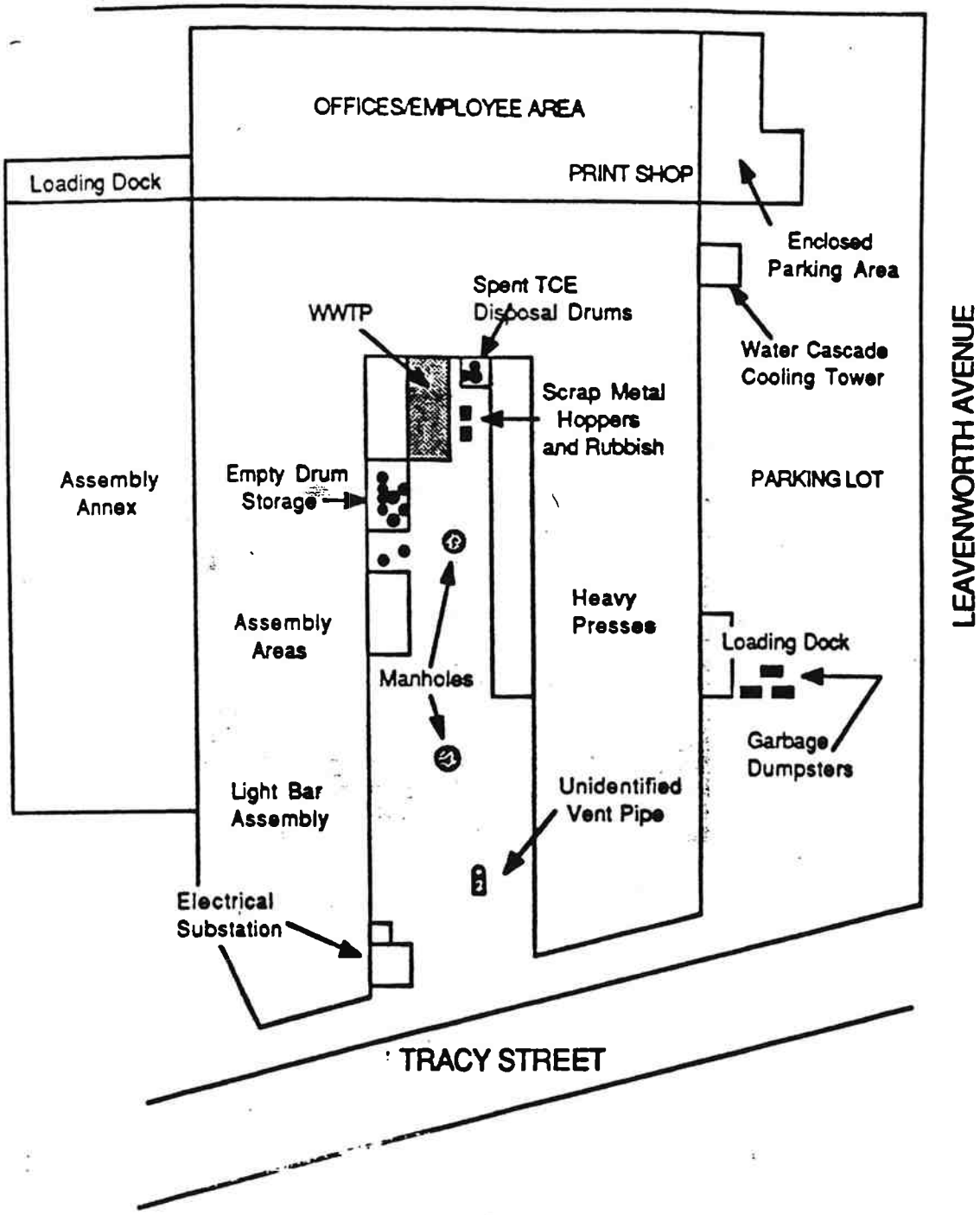
	Stearns & Wheler ENGINEERS AND SCIENTISTS
DATE: 4/9/90	Figure 5 SITE MAP R.E. DIETZ CO. WILKINSON ST. FACILITY PHASE 1 ENVIRONMENTAL ASSESSMENT
JOB NO: 1918.35	
GWD	

Source: R.E. Dietz, Mailing No. 1, Appendix 2

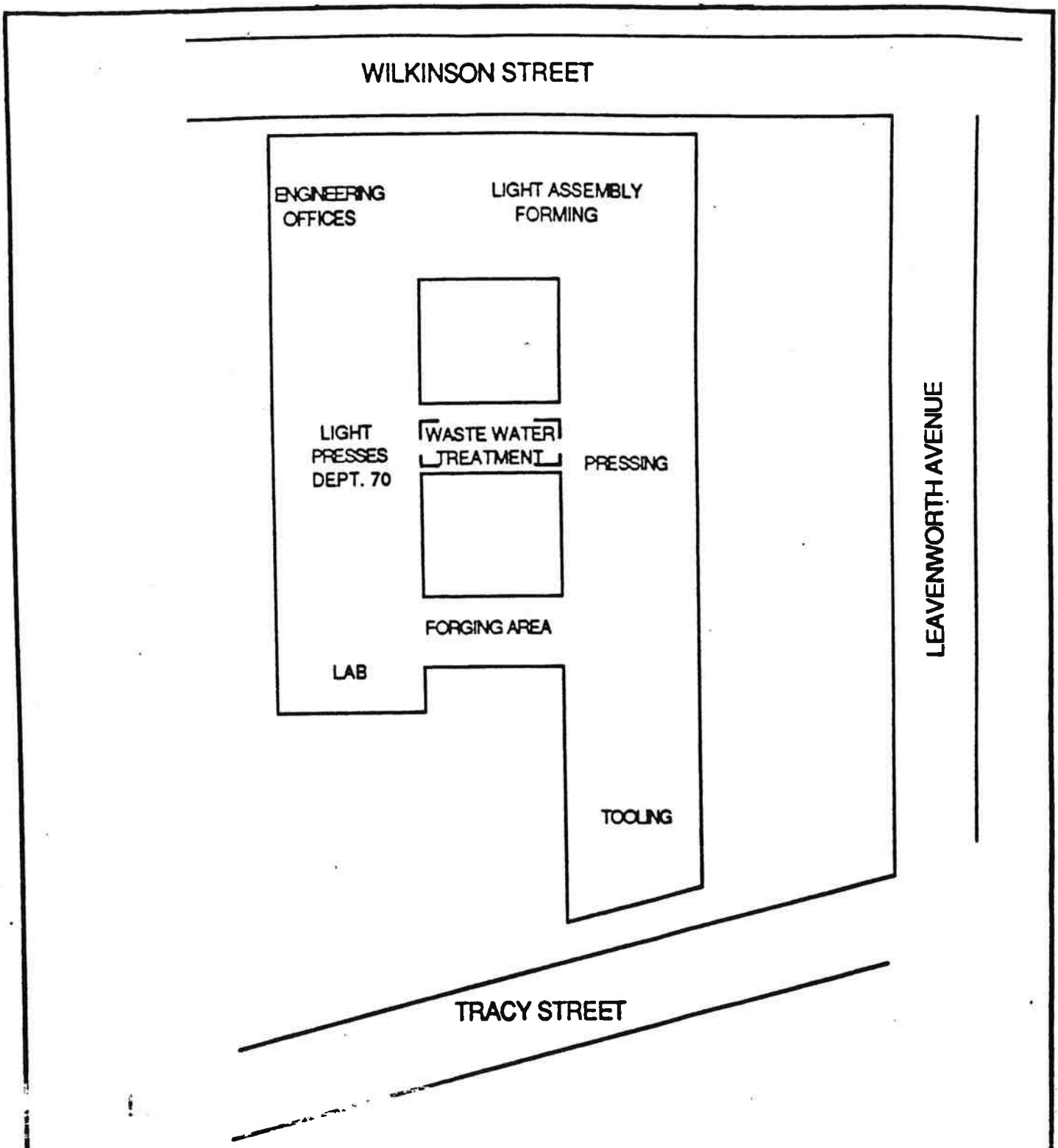


Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/9/90	Figure 6
JOB NO: 1918.35	R.E. DIETZ CO.
DRAWN BY GWD	WILKINSON STREET FACILITY
	Phase I Environmental Assessment

000005

Source: R.E. Dietz, Mailing No. 1, Appendix 2



THIRD FLOOR
NOT TO SCALE

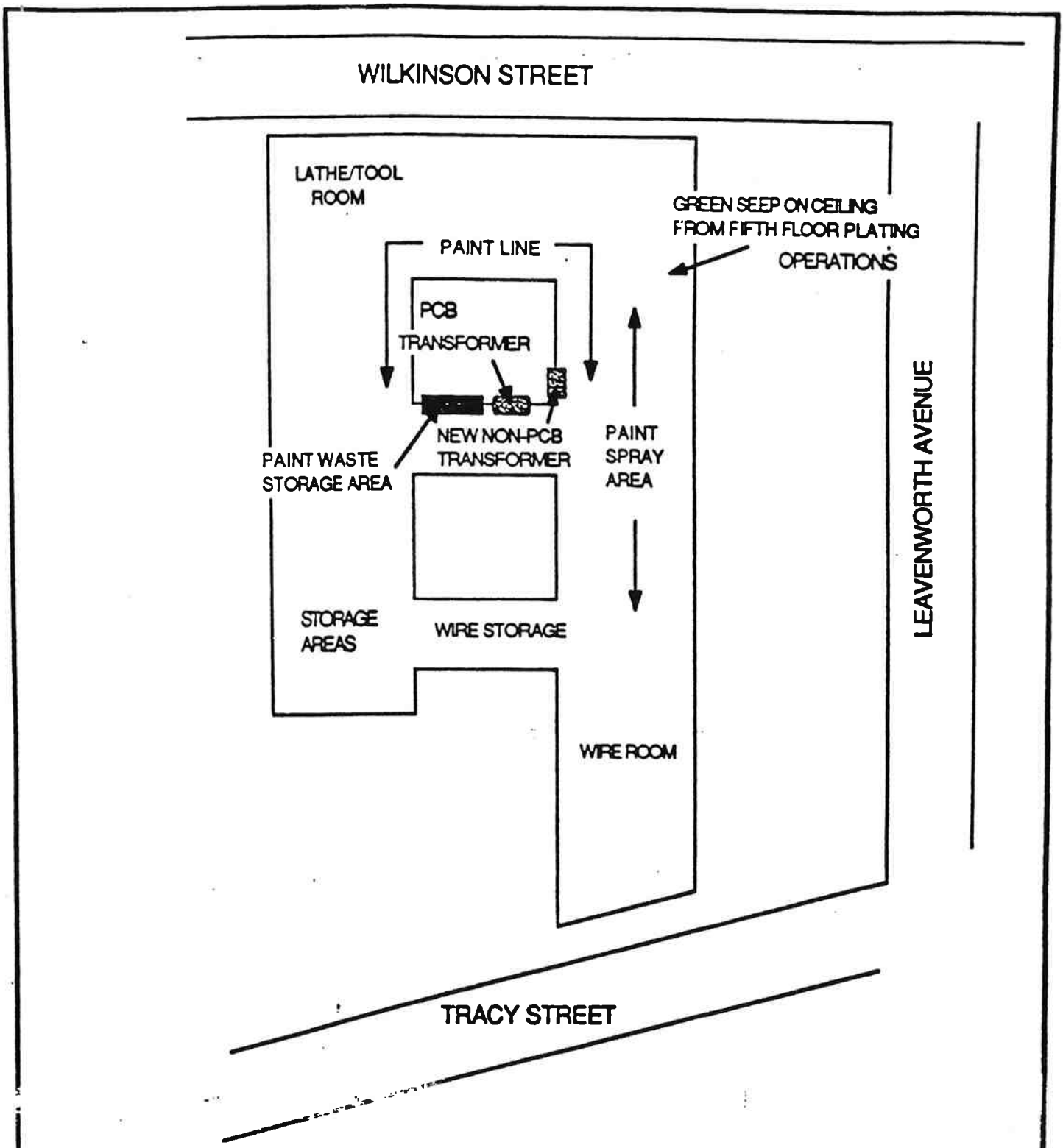
N

Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/9/90	Figure 7
JOB NO: 1918.35	R.E. DIETZ CO.
DRAWN BY: GWD	WILKINSON ST. FACILITY
	PHASE 1 ENVIRONMENTAL ASSESSMENT

000006

Source: R.E. Dietz, Mailing No. 1, Appendix 2



FOURTH FLOOR
NOT TO SCALE

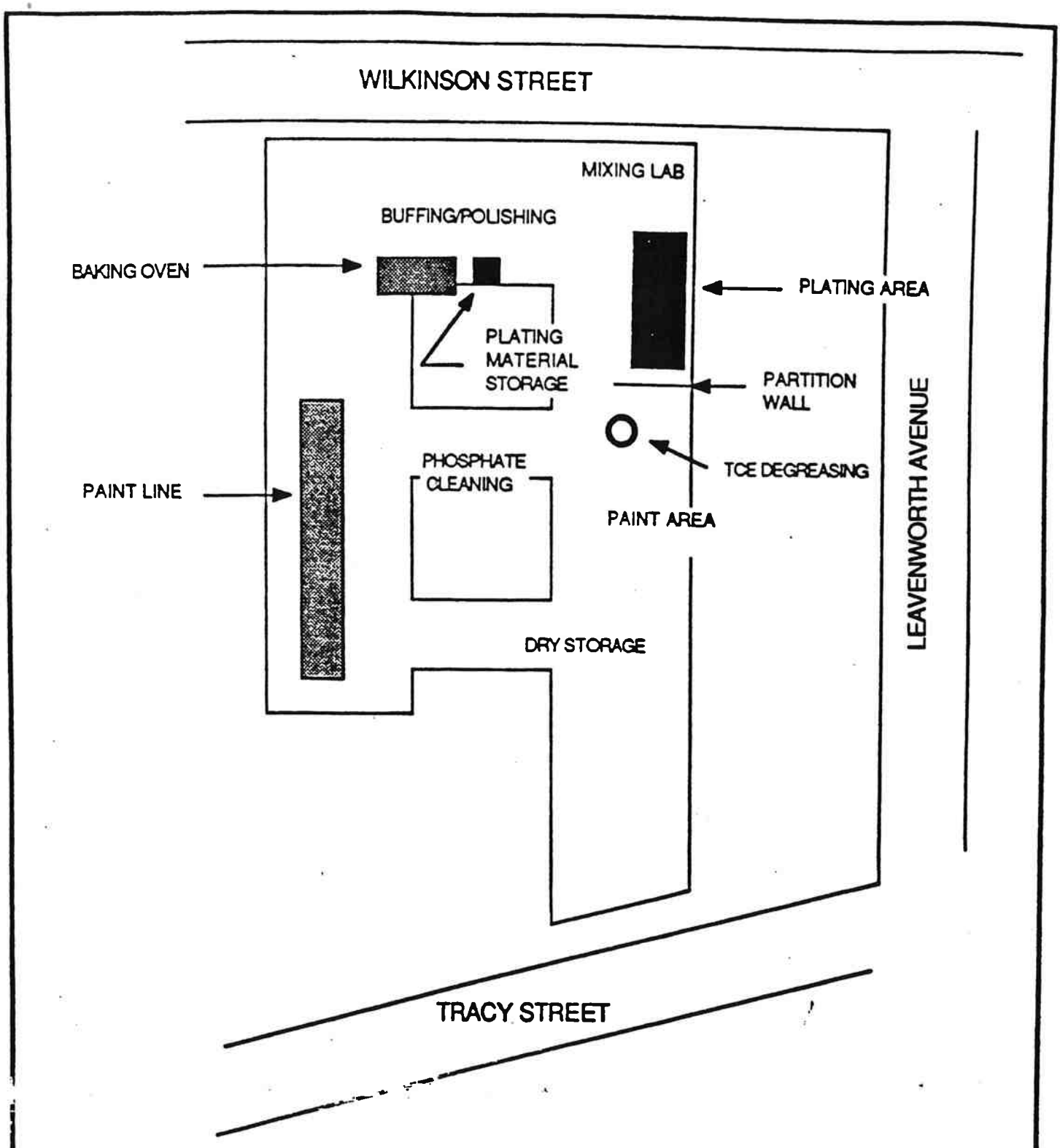
N

Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/9/90	Figure 8
JOB NO: 1918.35	R.E. DIETZ CO.
DRAWN BY: GWD	WILKINSON ST. FACILITY
	PHASE 1 ENVIRONMENTAL ASSESSMENT

000007

Source: R.E. Dietz, Mailing No. 1, Appendix 2



FIFTH FLOOR
NOT TO SCALE

N

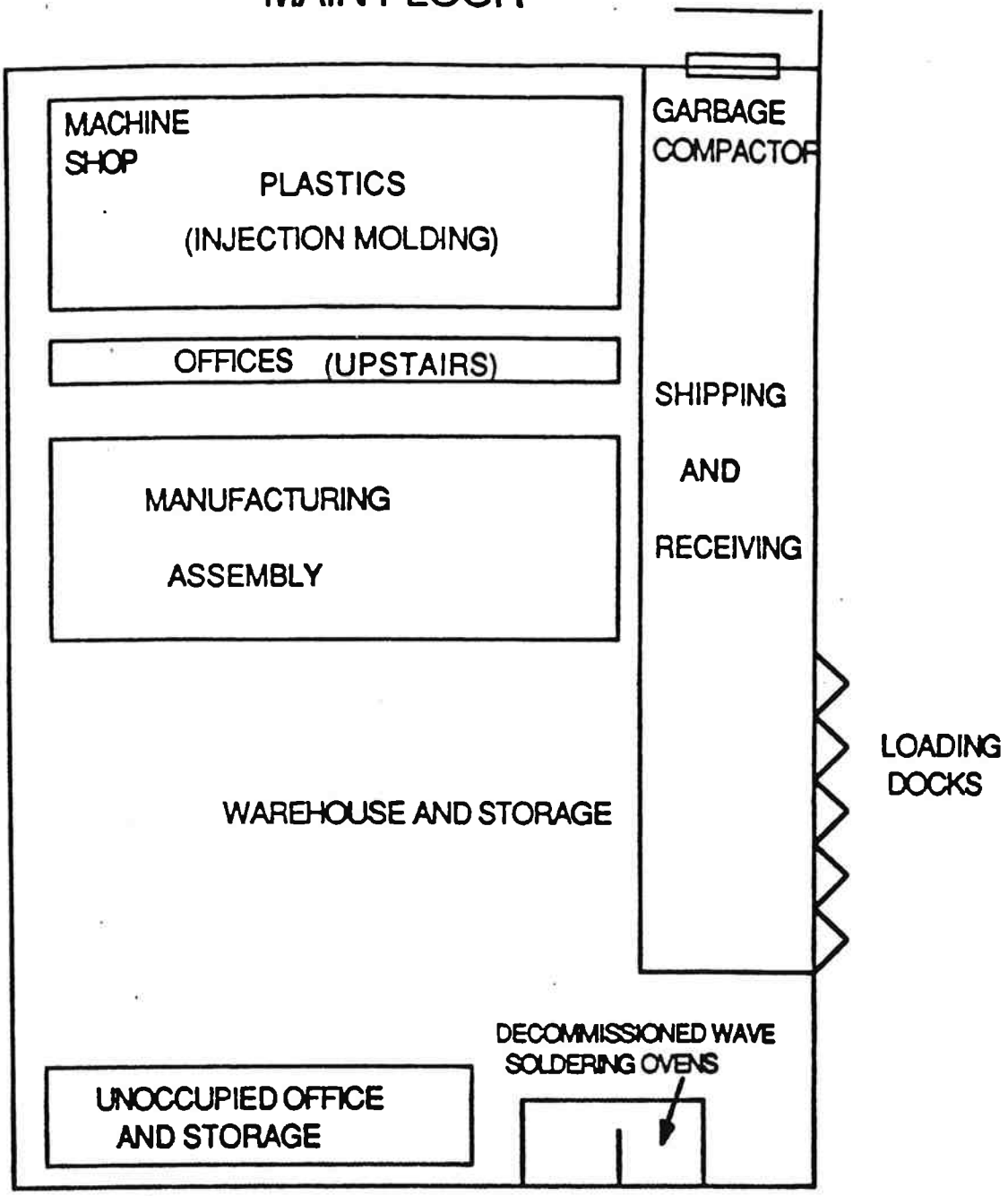
Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/9/90	Figure 9
JOB NO: 1918.35	R.E. DIETZ CO.
DRAWN BY: GWD	WILKINSON ST. FACILITY
	PHASE 1 ENVIRONMENTAL ASSESSMENT

000008

Source: R.E. Dietz, Mailing No. 1, Appendix 2

MAIN FLOOR



NOT TO SCALE

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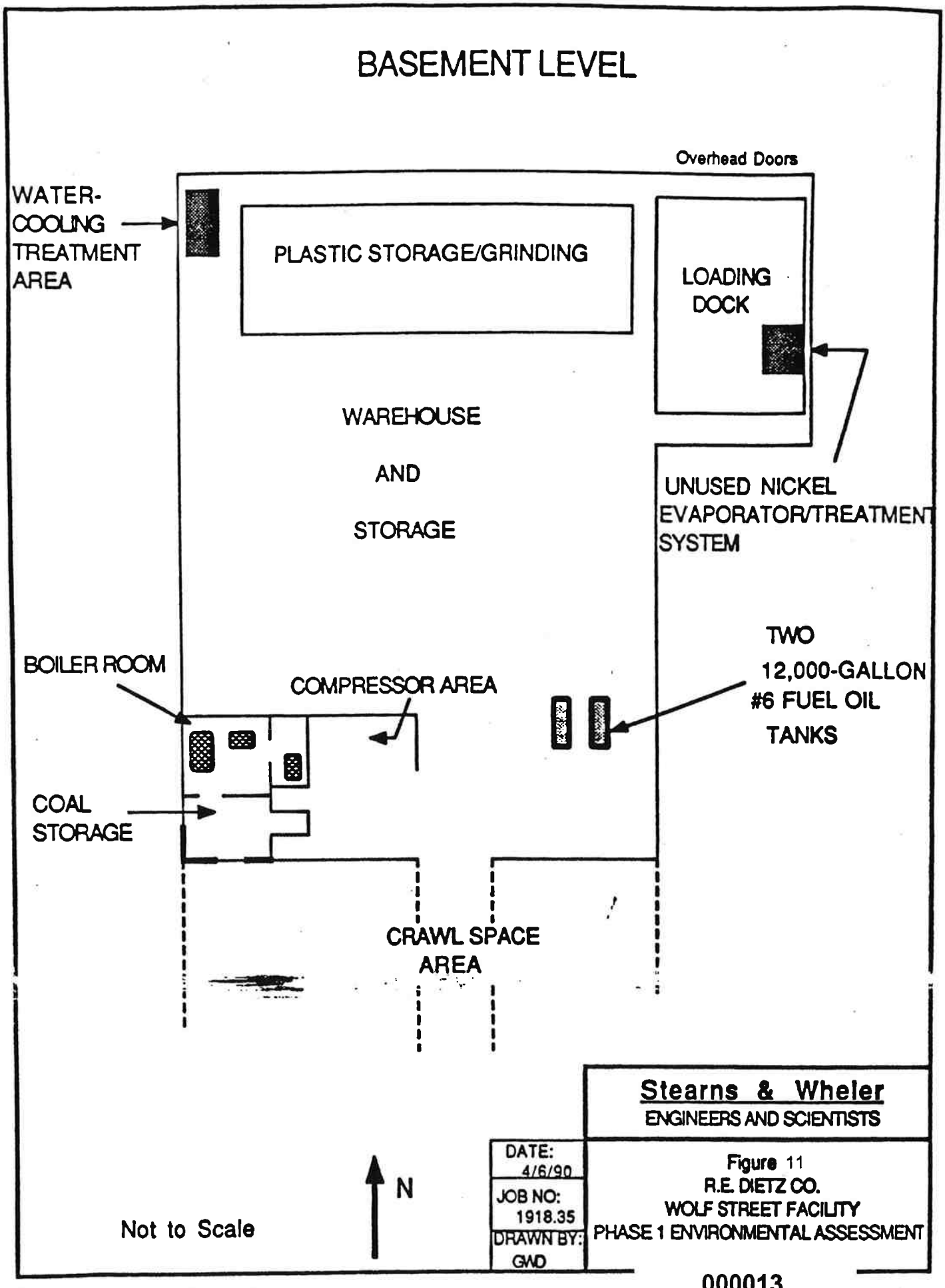
Stearns & Wheler
ENGINEERS AND SCIENTISTS

DATE: 4/6/90
JOB NO: 1918.35
DRAWN BY: GWD

Figure 10
R.E. DIETZ CO.
WOLF STREET FACILITY
PHASE 1 ENVIRONMENTAL ASSESSMENT

000012

Source: R.E. Dietz, Mailing No. 1, Appendix 2



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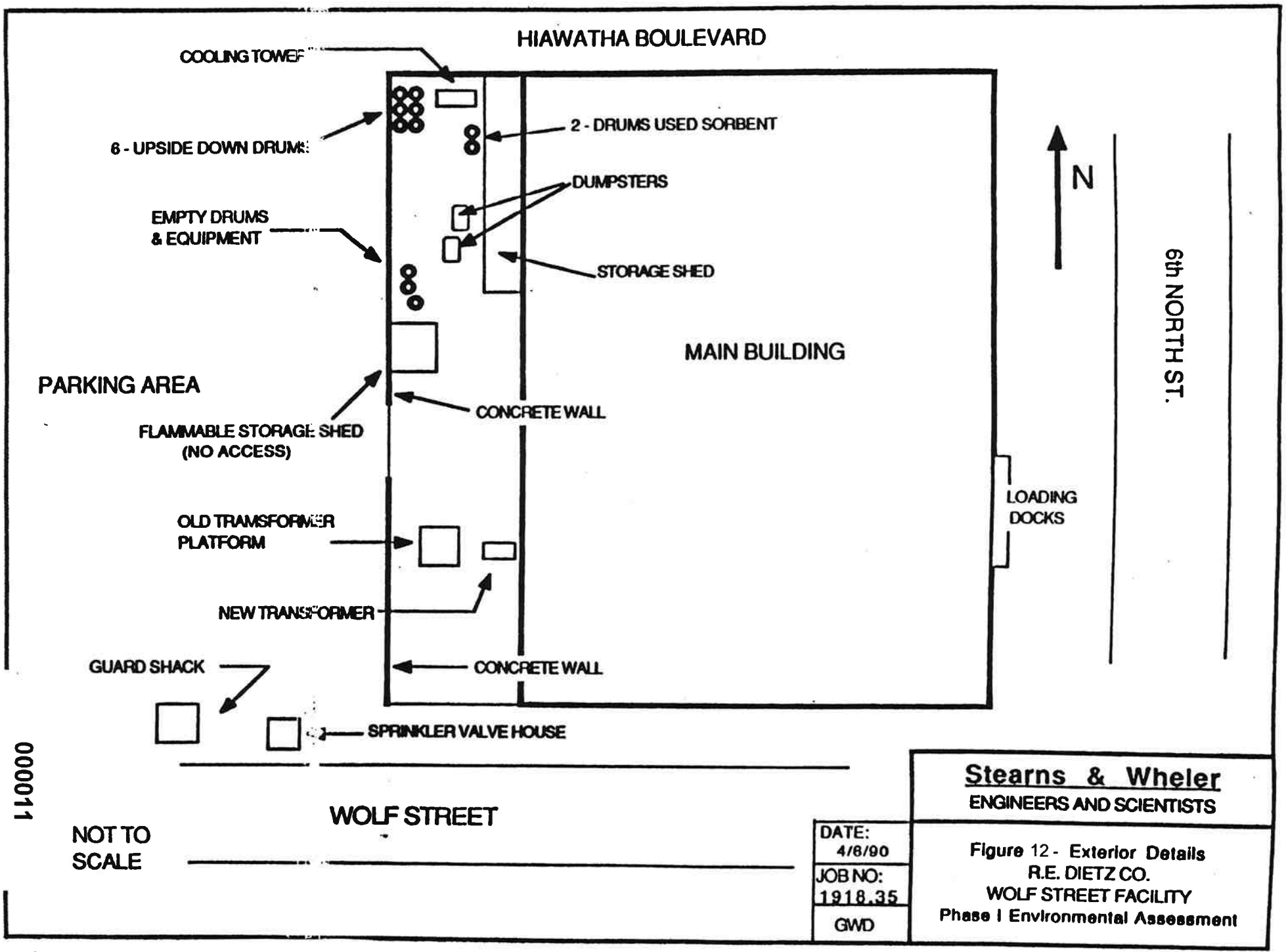

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Source: R.E. Dietz, Mailing No. 1, Appendix 2